

JAN 14 1930

# COMMERCIAL CAR JOURNAL

*and* OPERATION & MAINTENANCE

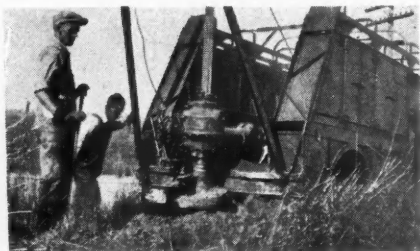
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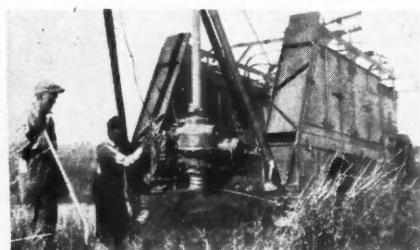
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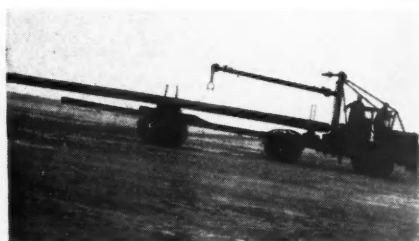
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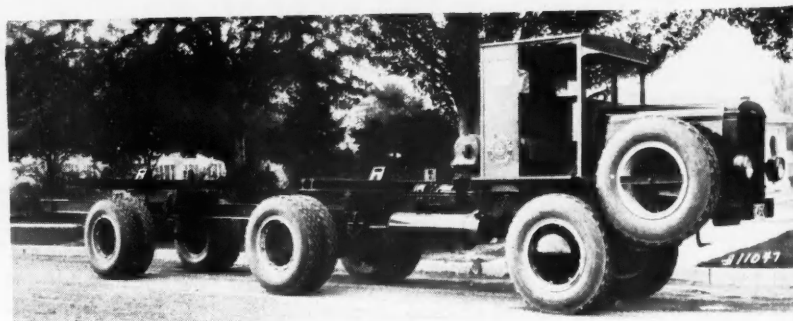
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# COMMERCIAL CAR JOURNAL

and OPERATION & MAINTENANCE

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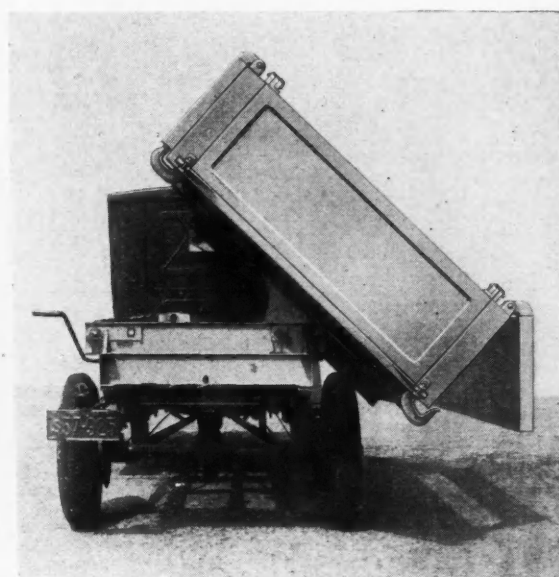
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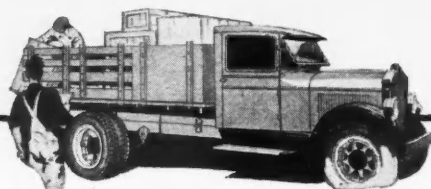
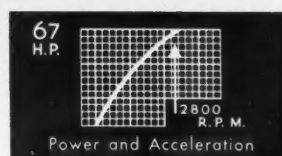
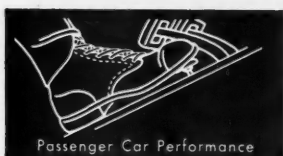
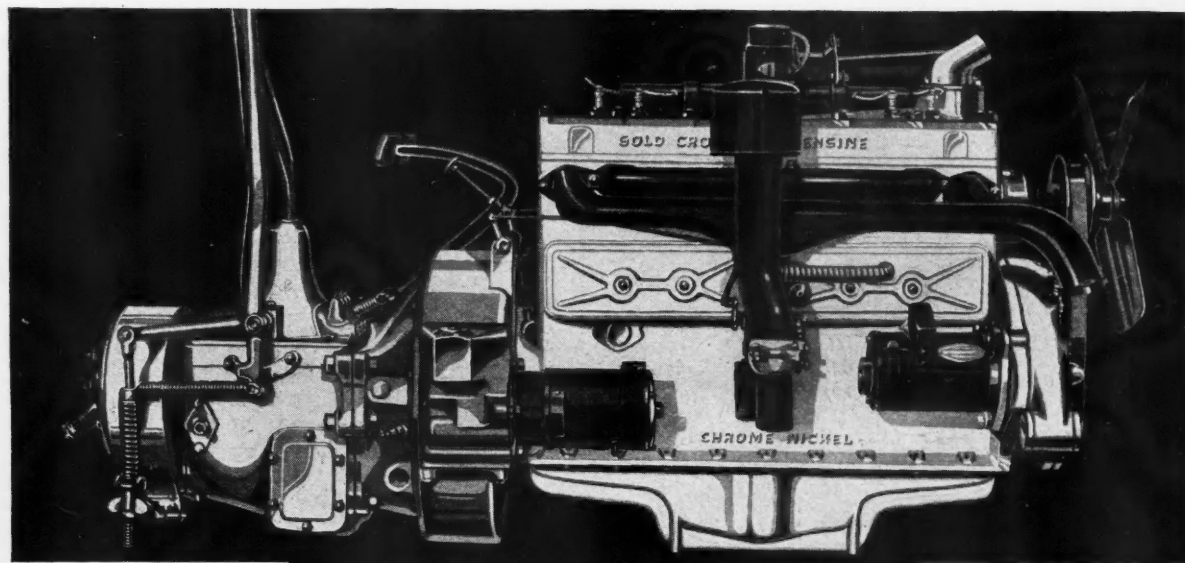
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# COMMERCIAL CAR JOURNAL AND OPERATION & MAINTENANCE

VOL. XXXVIII

PHILADELPHIA, JANUARY, 1930

NUMBER 5



# INDUSTRY SEES BIG YEAR AHEAD

Dealers Expect First Half to Surpass  
First Six Months of 1929. Manu-  
facturers Think Record Year Just  
Ended Will be Equalled if Not Bettered

By GEORGE T. HOOK

THE truck industry in 1929 set new records in production, domestic sales and export sales. The year was the greatest in truck history. The gains made over 1928 were as follows: 41 per cent in production, 50 per cent in domestic sales and 61 per cent in export sales.

With this as a background, it is apparent that predictions concerning the coming year of 1930 should be made only after the most careful thought and consideration, and then with extreme caution. It could be assumed that dealers and manufacturers making forecasts would follow just such a line of action. Therefore, it is interesting to know that a survey conducted by the writer reveals dealers to be feeling confident that 1930 will be another big truck year, and that sales in the first half of the new year will show a gain of approximately 20 per cent over the first half of 1929. Manufacturers included in the survey likewise are optimistic that truck business will be good in 1930. Quite sanely they refuse to predict a superlative condition, and lead one to infer that production will be geared to demand. The gist of their opinions is this: Truck business in 1930 will be equally as good as in the record 1929, if not better.

In divulging their 1930 expectations it is worthy of mention that dealers and manufacturers took into consideration the stock market deflation, but discounted its having any ill effects on the truck market. Certainly no immediate effects have so far made themselves apparent. Each month since October, when the stock market developed fallen arches, truck sales have exceeded sales for the same months of 1928. And it cannot be denied that whatever clouds have gathered on the national business horizon since the stock market flop have been given a silver lining, so far as the truck industry is concerned, by the recent Hoover conferences.

Captains of industry conferred with the President and pledged themselves to an extensive program of construction work during the next year. Since they have the welfare of the nation at heart, there is no good reason for doubting their sincerity, and that fact is in itself a sufficient reason for the truck industry to look on 1930 with rose-colored spectacles.

If, as our dealer inquiry indicates, a 20 per cent gain in domestic sales actually were made in the first half of 1930, it would mean the sale of about 315,000 trucks. This is quite a slice of the 500,000 to 525,000 trucks the country is expected to absorb in the entire 12 months of 1930. To some, 315,000 may look a bit extravagant. But this much is certain: if an extensive program of construction work is undertaken, the truck industry ought to make its best showing in the first half of the year.

One of the most healthy conditions in the entire truck situation is the fact that manufacturers by and large did not overproduce in 1929. In fact export and domestic sales statistics are proof that production failed to meet the demand, with the wholesome result that dealer stocks were depleted to the extent of around 35,000 units. It should be a source of considerable gratification to the truck industry that no extremely disturbing factor such as heavy inventory will enter into the competitive situation. Competition will be frisky enough without such a can tied to its tail. In the  $\frac{3}{4}$  and 1-ton fields, which a number of manufacturers plan to cultivate intensively with good products priced lower than ever before, there will be a new keenness to competition. The heavy-duty field—2-ton and up—should by virtue of the construction campaign engage in some of the most aggressive selling in years.

Because there will be a keen competitive condition, it is to be feared that many dealers will meet





it in the old-fashioned way by giving buyers everything short of their shirts. Some dealers may find at the end of 1930 that they've even given away the shirts. Every dealer in the country will unhesitatingly deplore this practice of over-allowances on trade-ins as unprofitable and unethical, and suggest that it ought to be made unconstitutional. And the writer will wager that the vast majority of dealers if approached would declare that their skirts were clean and that it was the other fellows who were over-allowing and indulging in cut-throat practices. There's nothing left to do in such a situation except to emphasize to dealers the wisdom of conducting a business along profitable lines regardless of the other fellow's tactics. Every dealer must be aware of this fact; probably every dealer is. And if there is this realization, but no action, then nothing that anyone can say will do a dealer any good. In the truck industry the trade cannot and does not point the finger of blame at manufacturers and say "your over-production and your high-pressuring are the cause of it all." Dealers (and there's something admittedly ludicrous about the situation) simply blame over-allowing on one another.

In considering the following views of a number of the principal manufacturers, the trade will probably be pleased with their conservatism, and should note that while the

makers predict no startling gains over 1929, they do reject any thought of a recession. Here are the enlightening opinions of 1930 prospects domestically and abroad:

M. L. Pulcher, president, Federal Motor Truck Co.: "Nineteen-thirty domestic truck business should be as good or equal to that we have done before in our history. From our standpoint it looks better. With practically the complete elimination of horse-drawn vehicles and with commodities to be moved, there is no way to do it other than with motor trucks.

"In regard to export business for 1930 it looks very good to us. Our company has always been favored with considerable export business because of our long 20 years' standing in the truck business, and the expending of considerable effort each year in this field has been very productive.

"So we are looking for a general continuance of good business for 1930, both in the domestic and export fields."

Carl Parker, assistant sales manager, Reo Motor Car Co.: "It seems to me that the truck industry for 1930 will at least sustain the 1929 volume.

"More uses for motor trucks are being discovered and recognized daily. For every additional 10 miles of good roads there is an increase in truck usage, and the demand can almost be figured out to a formula.

"Peak periods in the production of small low-priced trucks have always been followed by a spurt in demand for the larger capacities. The effect of competition of the cheap light trucks is merely for the time being and then they generate business for the higher brackets.

"In many respects the motor truck has been prevented from developing itself due to a more or less indifference on the part of the truck manu-

facturer toward time and labor-saving devices in the way of equipment to be mounted on trucks to make them better earners and economizers.

"The manufacturers of equipment have never had an adequate field selling organization, and their outlet has been restricted. The truck manufacturer has been content to produce the standard chassis and a few best sellers in conventional body types.

"With more or less sudden interest in this incidental field by the truck

maker, the truck will be automatically exploited for new and wider uses.

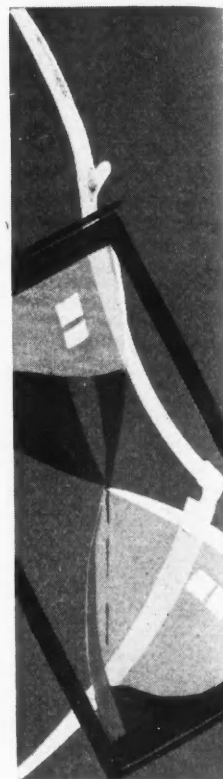
"Instead of the trailer, which is enjoying a rapidly growing demand, reducing the need of chassis, it will create new business in fields practically unexplored.

"Regardless of the economic conditions, the only thing that can hold truck business back is a lack of vision on the part of the manufacturers themselves, a lack of confidence on the part of the dealers and a lack of trained salesmen.

"Today the average truck user knows more about the transportation problem than the average salesman, which makes it all the easier for the smart dealers and their trained salesmen to go out and get theirs.

"It will be much easier for a dealer to solve the problem of used trucks than of used passenger cars. Trucks should be worn by the original purchaser down to just short of the point where they endanger other traffic on the highways, and then permanently retired. This can be done without reducing volume, as might be the case with passenger cars, because with their higher rate of mileage they reach their expectancy much sooner."

W. F. McAfee, truck sales manager, International Harvester Co.: "Regarding the outlook in the domestic market for 1930, we feel that we should sell more trucks than last year, but it is our thought that the business will be more difficult to secure, especially in the industrial lines.



## INDUSTRY SEES BIG YEAR AHEAD



"We understand from our export company that the outlook is good for an increase in business next year."

C. A. Tilt, president, Diamond T Motor Car Co.: "The outlook for 1930 is quite favorable, and the progressive manufacturer with an aggressive sales and dealer organization will do a satisfactory volume of business."

"Our experience in the export market is somewhat limited, but it is our opinion from contacts which we have in that market that the general outlook there is favorable."

L. A. Miller, president, The Willys-Overland Co.: "I believe domestic truck business and export truck business in 1930 will be fully as great as in 1929, and 1929, as you know, was a record year. So far as the domestic market is concerned, there will be a great demand created by road building and construction projects."

C. B. Rose, president, LaFrance-Republic Corp.: "If the past thirty days is any criterion, I think that the general truck business outlook for 1930 will probably be about the same as the year 1929. In other words, our business and business indications in this field since the stock market upset have been fairly good."

"Our experience, of course, is not a criterion to go by, on account of the fact that we have very recently put together two organizations and have been going through a revamping peri-

od, including the production of three new models, and a somewhat radical change in manufacturing policy."

"Our export business is going along fairly well, and if we show the proper aggression, we feel that exports for 1930 should be fair—taking into consideration certain bad points."

Howard E. Sneathen, director of Dodge Brothers Truck sales: "The outlook for 1930 is most encouraging from recent surveys undertaken by the factory. The paved highway program and widening projects contemplated by all units of government will afford greater sales opportunity for the industry. The export market should show much improvement over this year. Increased emphasis on distribution problems will naturally result in heavy truck sales to a public that is more than ever dependent on regular operation of delivery trucks."

Watt L. Moreland, president, Moreland Motor Truck Co.: "It is my opinion that the outlook in the motor truck business for 1930 is very bright, and production should at least equal that of 1929. The increased demand for highway transportation, the acquisition by traction companies of motor transport lines for passenger and freight, and the replacement of old trucks by modern and improved units to cope with the demand for speed and efficiency cannot help but keep the truck business active."

Carl G. Hayssen, secretary-general manager, Sterling Motor Truck Co.: "We have just made a rather exhaustive study of the market possibilities of motor trucks in all territories in which we are represented. It appears that the effect of the stock market has been rather a matter of purse strain. In the territories above described, our sales organization reports more activities than prevailed a year ago. Our business has increased slightly over last year for the same period, and we feel that 1930 will compare favorably with 1929."

William Schacht, president, The LeBlond-Schacht Truck Co.: "From every indication the coming year will be a very successful one for the truck industry. We anticipate a big increase in sales volume and have laid out our production schedule on a basis of a 50 per cent increase over 1929. We have recently made a canvass among all of our branches and dealers, and they all report the prospects for 1930 very encouraging."

C. P. Cary, manager truck sales, Durant Motor Co.: "We believe the domestic market for trucks in 1930 will be about the same as it was for the year 1929. Except that for the drop in general business, which will be made up by the increased number of trucks sold in the building business, there will be very few changes."

"The second six months should run a little better than the last six months of this year, but the domestic business on a whole will probably just about

equal this year's business. At least this is the impression we gain from reports coming to us from nearly every section of the country."

"The export business next year will improve considerably over this year from what indications we now have. The gradual improvement of roads in foreign countries is doing much to strengthen the truck business, and we look for more business in the foreign field for next year as far as the Durant company is concerned, although at this time it is rather difficult to tell whether this will be four or six-cylinder business, as there is a growing desire for sixes abroad."

Hal T. Boulden, manager, commercial car division, The Pierce-Arrow Motor Car Co.: "With the motor truck firmly entrenched as the second largest division of the automotive market, a general building program of great magnitude in the making, enormous government building projects under way, plus miles and miles of good roads to be built in this country, the year 1930 looms on the horizon 'bigger and better' from a truck profit standpoint than I have viewed it in a number of years past."

"The big problem, as I see it, from the sellers' point of view, is that it is high time that the 'cut-throat' method in vogue in many truck selling territories be eliminated and a get-together attitude and submerged self-interest in the common cause be the order of the day. There will be a great amount of new transportation machinery needed to get this progress under way, and the sooner the seller learns to sell (at a profit) the truck he is offering on a basis of what the truck is capable of doing, and not what the buyer wants the truck to do, just that soon will grief and dissatisfaction be eliminated."

"If we are the second largest division of all the automotive markets, then let's hold that position and make it even stronger by instilling confidence and good-will between seller and buyer, and buyer and seller. And that same thought is equally as important, if not more so, between the factory and the distributor, for it must be apparent ere this that the dealer is an important link in the chain in the factory hook-up."

"We (the factory) could build trucks studded with diamonds, or a two-ton job capable of carrying six tons, but that would be to no avail without a distributing and servicing organization to sell and service the product after it is sold—and that goes just as strong the other way around."

"So, in the final analysis, if the factory and distributors expect to 'cash in' on this 'golden egg' that has been laid on the threshold of 1930, it's high time that we get ready now and be prepared to meet 'Miss Prosperity' at least halfway along the main highway of truckdom."



The Commercial Car Journal  
and Operation & Maintenance

# SERVICE

## OFFERS OPPORTUNITY FOR MORE PROFITS

**D**EALERS who are seeking ways and means of making more money in 1930 than they did in 1929 should look to maintenance for a major part of the increase. It is a field which many dealers are cultivating to their profit and which they will develop still more in 1930. They are making money in their shops while competitors are losing money or breaking even. While some of their neighbors would like to be rid of service departments these dealers consider the trade of their shops as very valuable assets.

Why is it that one dealer makes money from his shop while another just worries along, hardly breaking even? Floor space alone will not make a profit, neither will a force of well-trained mechanics, a carload of shop equipment nor a host of trucks in a territory in dire need of maintenance. The factor which brings about loss or gain in a shop cannot be measured, weighed or seen, but it is none the less real.

Upon the frame of mind of the dealer and his service manager depend the profits of a maintenance department. If the dealer does not care whether his shop makes money or not, it probably won't. If the man in charge of the shop, service manager or shop foreman or whatever his title, shares his boss' pessimistic opinion, or has one of his own, that there is no money in maintenance, there is little risk in predicting a loss in his department.

Some dealers allow their shops to shift for themselves, others look upon shops as necessary evils, still others have shops because competitors have shops and doubting prospects expect dealers to maintain service facilities to protect them in case of trouble.

No such motives inspire other dealers who operate their service departments for the same reason that they are in business—to make money. They know that various incidental advantages accrue from well-man-

**T**O convince truck dealers everywhere by reasoning and proof that they should "Make Money from Maintenance," *COMMERCIAL CAR JOURNAL AND OPERATION & MAINTENANCE* begins with the accompanying article the most elaborate service series ever conceived for the benefit of the truck trade.

The articles will embody the opinions and recommendations of maintenance experts from factory and field, and the experiences of truck dealers. They will show that the service shop can add to a truck dealer's profits, and will show how it should be done.

aged shops but they are not losing sight of the primary object of net profits. In such establishments dealer and service manager work together to make profits from maintenance. Sales and service departments cooperate, shop personnel takes pride in its work, customers "get service" and the expected profits come to pass.

Typical examples of the effect of the sentiment of management on profits are two dealers in a small city. In one establishment the service manager is discouraged because no one cares very much whether or not the shop makes money. Consequently he is making no effort to get business for a car washer which was installed primarily for washing new vehicles before delivery. He knows that car washing is profitable but "what's the use?" A short distance away another dealer, keenly interested in service, paid for a car washer out of earnings in a little more than a year.

# MAKE





## MONEY FROM MAINTENANCE

*The Commercial Car Journal  
and Operation & Maintenance*

Experiences of two dealers in a small town show the same contrast. One, needing more showroom space, rented a building with a dandy showroom but with a shop much smaller and less accessible than that in his former location. He moved about a year ago and now he reports new car sales poor and service business rotten. Another dealer who gave up his contract had no new vehicles to sell for almost a year until he signed up for another line. During this interval the shop quickly emerged from its former backstage position to become the foundation of the business, a position it has retained.

Many objections can be made to the suggestion that shops should contribute a major share of total net income. Maintenance has changed, competition has sprung up for each of the various functions which go to make up a complete service department, a lot of jobs are too small to bother about. However, any truck dealer who has been in business more than a few days knows something about overcoming difficulties and he is quite willing to tackle them if the reward is sufficiently promising. In considering whether or not it is worth while to seek greater gain in his shop he cannot overlook the fact that many dealers, probably some of his acquaintance, have faced these difficulties, overcome them and made money while so doing.

Service managers whose departments are making money are fully aware of the change in maintenance and increase in competition which prevent, or deter, others from going

January, 1930

after dividends in this field. Instead of worrying about these difficulties, however, or fighting against them, these service men are actually taking advantage of the obstacles which bar others from profits.

Maintenance is different than it was a few years ago and their service departments have changed to correspond. They have not ignored competition but have fought it. They seek small jobs and cheerfully undertake any job, no matter how trivial. One keen service manager in this group was agreeably surprised at the results of an experiment in selling small jobs. A "special" which included parts and material for fastening down floorboards brought in a lot of business and sold a pile of floorboards.

More quick repair jobs and relatively less major jobs are coming into the average service station than was the case a few years ago. There are more small jobs because owners have accepted the preventive maintenance idea and they demand a higher standard of performance and quietness than formerly was the case. Operators are aware that it costs less to lubricate and inspect a truck regularly and take care of little faults as they develop than it does to let things go until something breaks.

Decrease in major jobs is due to improvement in design and construction of trucks in the past few years. There has been no overnight revolution but a constant betterment. Because the change has been gradual its first effect frequently is not detected. A prominent fleet operator stated recently that he was operating trucks 45,000 miles between overhauls compared with 15,000 miles six years ago. A truck dealer, who made a special study of the subject, found that overhauls make up but a small part of his service business and that brake relining, an old standby, is but a fraction of its former volume.

There is a lot of profit in minor maintenance for a shop equipped to

handle this type of work to advantage. Many, outside the fold of truck dealers, have sensed the opportunity and have established special service stations catering to this field. Washing, lubrication, tire, battery, sheet-metal and radiator repairs are offered singly or in various combinations.

No one who takes more than a passing interest in the subject can doubt that many of these establishments have made money, some of them a lot of money. As a consequence, others enter the field and competition for minor repairs becomes keener and keener.

With less major work coming to his shop and with a host of new competitors for the minor jobs a dealer who lets things drift soon finds himself in a very uncomfortable position. His shop is furnishing that ill-defined assortment of repair jobs which the owner calls "free service" and it is doing a lot of big jobs which involve complaints from customers and policy adjustments but it is missing out on the profitable small jobs. A shop may make a profit in spite of such a situation but chances for gains are greatly reduced.

Dealers who are not satisfied to "take the leavings" of service and are determined to get their share of profits from maintenance in their territories have an advantage which they can use to their gain. This is the fact that buyers of trucks come back to the dealer for inspection and free service during the guarantee period and for advice from then on. One reason for offering free inspection is to forestall complaints about the vehicle and the other is to induce the owner to call on the service department at least two or three times.

These first calls, when the owner presumably is in an amiable mood because he is getting some work done for nothing, are the dealer's opportunity to win the owner as a steady service customer. Dealers who are building up their shop profits start

with the first free inspection call to sell the owner on their service facilities. They point out the value of periodic inspection and lubrication to the owner and tell him that they are prepared to do this work for him at reasonable prices and at his convenience.

This policy is being followed with success by many dealers in response to factory urgings. One factory repeats the message every month to each of its dealers and other factories keep it constantly before their dealers. Some dealers have been more successful in carrying out the factory policy than others but the results show that the idea is fundamentally sound.

The logical way to make more profit in the shop is to do more maintenance business, and ways and means of accomplishing this result fall into three groups, adding functions, servicing all makes of trucks and offering night service.

Adding functions to a shop does not mean that every dealer should immediately prepare to offer every maintenance facility in his shop. Any such action is impossible. But the dealer is faced with the problem of selecting one or two, or perhaps more, facilities which we can offer his customers.

Whether to service all makes or to restrict maintenance to the make of vehicle which he sells is one question which confronts dealers. In large cities many dealers follow the lead of factory branches and do not repair any make of truck except the one they sell. In smaller cities and towns conditions are more favorable for servicing all makes.

Night service is making money for many dealers and others are giving the subject careful consideration. Although frequently offered solely as a convenience to owners, night service has the important advantage of practically doubling shop capacity without much increase in investment.

Definite proof that truck dealers can make money from maintenance will be given in our next issue. The city of York, Pa., with a population of about 50,000, was selected as a typical small city for a survey of service profit possibilities. Every dealer selling trucks in York was visited. The article will tell how these dealers make profits in their shops and why they go after service business.

## SERVICE OFFERS OPPORTUNITY FOR MORE PROFITS

# 1/4 TONNERS COURT PARCEL FIELD

Austin and Martin Plan to  
Compete for Door-to-  
Door and Parcel Delivery  
Business in Near Future

By A. B. CROFOOT

**D**URING recent months at least two companies have announced plans to place on the market small, light and inexpensive trucks of approximately quarter-ton capacities, built on short chassis and powered with small engines. The first of these companies is the American Austin Car Co., licensed to manufacture and sell in this country under the designs and patents of a company that has been manufacturing successfully in England for a number of years. This American company is planning to turn much of its activities to making and selling trucks, although the Austin car is primarily a passenger car. The British company, however, also has a van that it markets successfully in Europe.

The other company is the Martin Motor Truck Co., which is planning to enter production on a truck designed to embody the inventions of James V. Martin, airplane designer, who has incorporated a number of aircraft construction features in his truck.

It is claimed for both these trucks that they will travel at 50 miles an hour, will go 45 miles on a gallon of gasoline, and they each weigh under 1000 lb. The Austin, it is claimed, will go 1500 miles on a quart of oil. The cubic capacity of the American Austin job, which will vary slightly from the British job, is not yet known, but the Martin interests claim that their job has a cubic capacity equal to the average Ford or Chevrolet truck.

When asked why they felt that there was a field for such trucks as they proposed to sell to the American public, representatives of both of these companies replied in much the same tenor. It is largely a matter of economy and efficient operation. They feel that the American business man is fully as interested in economical operation as is anybody else.

It is expected that these trucks will find their places largely in the parcel delivery field. Both trucks are to sell for \$500 or less, and will, therefore, furnish the parcel delivery field with a truck which will cost about the same as a motorcycle sidecar delivery outfit, and will cost little, if any, more to operate. Furthermore, they will furnish larger capacity than the motorcycle with its sidecar, and will furnish the driver protection from weather, which is not obtainable on a motorcycle.

The low fuel and oil consumption will make these units as economical to operate as is the motorcycle, the short wheelbase and small size make it easy to handle in traffic, and also make it easy to maneuver to the curb. One of the representatives pointed out that there is not only the economy in fuel and oil consumption, but on account of the light weight of these units, and consequent easy stopping, there will be an economy in the use of brakes.

That these conclusions are not merely the product of the  
(Turn to page 76, please)



# TAKE THE SALESMEN



By  
A SALES MANAGER

The sales manager who wrote this story--which is presented just as he wrote it--didn't want his name signed because he was too ashamed of the fact that his salesmen had made a boob of him on over-allowances on trade-ins. You can't blame him.

The idea he reveals in his article is, in the editor's opinion, a good example of practical psychology wisely applied to cure a pernicious habit among salesmen.



# TO THE JUNK YARD



YES, SIR! After looking over my Used Truck Inventory I have to admit that I'm one of the prize boobs, and that my salesmen must have found me to be the easiest prospect to sell that they ever ran across.

This business of having salesmen sell you on taking in some old relic in trade on a new truck has developed to such proportions that serious thought will have to be given to it and some ways and means devised to break up a habit which has become chronic among salesmen today.

What's that you say? You're not one of those managers that let your salesmen sell you on taking in some blister? That's a laugh; you don't honestly mean to state that you can look at your stock of used trucks and not have to admit you were sold some beautiful lemons, and as you gaze on them, oh boy! don't some of 'em give you a headache when you realize what the allowance was?

Now frankly this condition faced the writer, as it probably confronts hundreds of other managers, and the following plan was used to try and break up this pernicious habit, with remarkable results.

During the week three or four of the salesmen had come in with tentative deals, stating that they could secure orders if I would allow (naming the price) on the prospect's old truck and in each case the amount named was out of all reason, but this did not prevent the salesmen from proceeding to sell me on all the fine points about each one of these old cluckers they wanted me to trade in and I really believe they spent more time in trying to sell me on the idea how good these old trucks

were than they did with the prospect when they were trying to sell him the new job, and after the salesman summed it all up you felt that the customer was doing you a favor in even considering letting you have his old truck at this figure.

I made a list of each one of these old trucks that the salesman wanted to trade, found out what year, model, condition, etc., putting down the price the salesman wanted me to allow. With this list in my pocket I then started out and called on the various junk yards and frankly told the owner of each yard who I was and asked him if he had in his yard any of the trucks on my list. In one yard I found two, in another one, two of the junk dealers didn't have any that I had on the list, but in the last one I called on I found another. Altogether I visited five yards to find the trucks I wanted.

After I had spotted these trucks, I called a sales meeting the next morning and proceeded to take my salesman to the junk yards. In the first yard we visited they had a duplicate of a truck that one of the salesmen wanted to take in on a deal and had been pleading with me to give him permission to make an allowance of \$750. I asked the salesman to examine this truck and to tell me if he thought it was in as good condition as the one belonging to his prospect. After going over it thoroughly he admitted it was in just as good condition. The owner of the junk yard was then called over and asked what price he wanted for this truck and his answer was \$45. In other words here was a differ-

(Turn to page 74, please)

# SNOW PATROLS GO

## Variation in Obstacles to Be Overcome Causes Change from Heavier to Lighter Equipment

**D**URING the past 10 years the methods of snow removal and the character of equipment used have passed through a complete cycle of changes. When the snow-removal work was first begun road-grader blades mounted on or drawn by such trucks as were available were frequently seen on the roads. From these earlier units there were developed straight-blade plows attached to heavier trucks, and a little later V-plows of medium weight were mounted on the trucks. The next advance was toward massive and heavy types of plows, and rotary plows propelled by high-powered tractors. Now the pendulum of the cycle has swung back and in many states, for initial clearing at least, there are employed trucks of medium tonnage with straight-blade or light V-plow attachments.

This change from light to heavy equipment, and the return to the light equipment again, has been due in part to a variation in the obstacles to be overcome. The primitive snow-removal efforts with light equipment had for their purpose the shortening of the closed period of the roads by clearing away the early snowfalls. When the depth of snow, either from snowfall or drifting, became excessive for such handling, the roads were abandoned until the spring thaws reopened them to travel. The light outfits were adequate to maintain open thoroughfares throughout the year over the sections where the snowfall was light and drifting was not excessive, but in other regions, where the climatological conditions were more severe, the equipment was snowed under before the winter was far advanced.

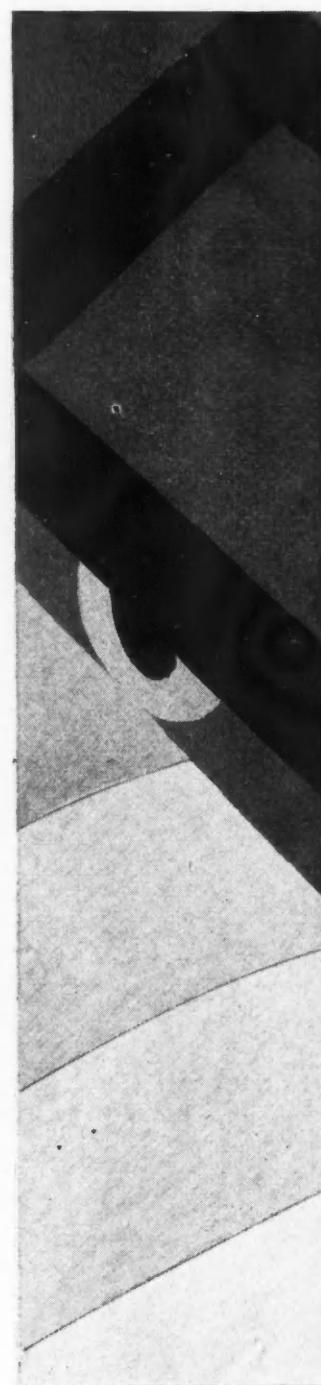
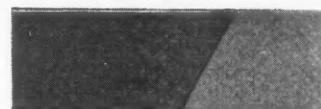
Next came the demand, in heavy-snowfall regions, to clear the main roads in the spring instead of waiting for the

elimination of the snow by the slow process of melting and evaporation. Then it was discovered that the equipment, that was adequate in the early winter for removing the newly fallen snow, was wholly inadequate for clearing away deep, packed snow. This compelled the authorities to purchase or build in their local shops heavy displacement and rotary units.

Finally with the growing use of motor vehicles there has come the necessity for keeping the roads open to travel throughout the entire winter. To accomplish this, the patrol system has been developed with light, mobile equipment for clearing the traveled way, light and heavy mechanical units for widening purposes, and various types of structures for drift prevention.

Under the patrol system, as generally practiced, the snow is attacked with motor-truck equipment shortly after the beginning of the storm, and the removal work is carried on continually until the snowfall has stopped and the traveled ways are completely clear. Experience shows that newly fallen snow up to approximately 12 in. in depth may be removed with light plows mounted on trucks of moderately high speeds, and the records of the United States Weather Bureau show that single snowfalls exceeding 12 in. in depth are rare. Consequently, if the roads are protected from deep drifts, and the clearing operations are begun promptly, the traveled way may be kept open while the snow is in progress, or cleared within a short time after the storm has stopped, with only the lighter, fast-moving truck plows. The slow-moving tractor plows that are more expensive to operate are used later for the necessary widening and occa-

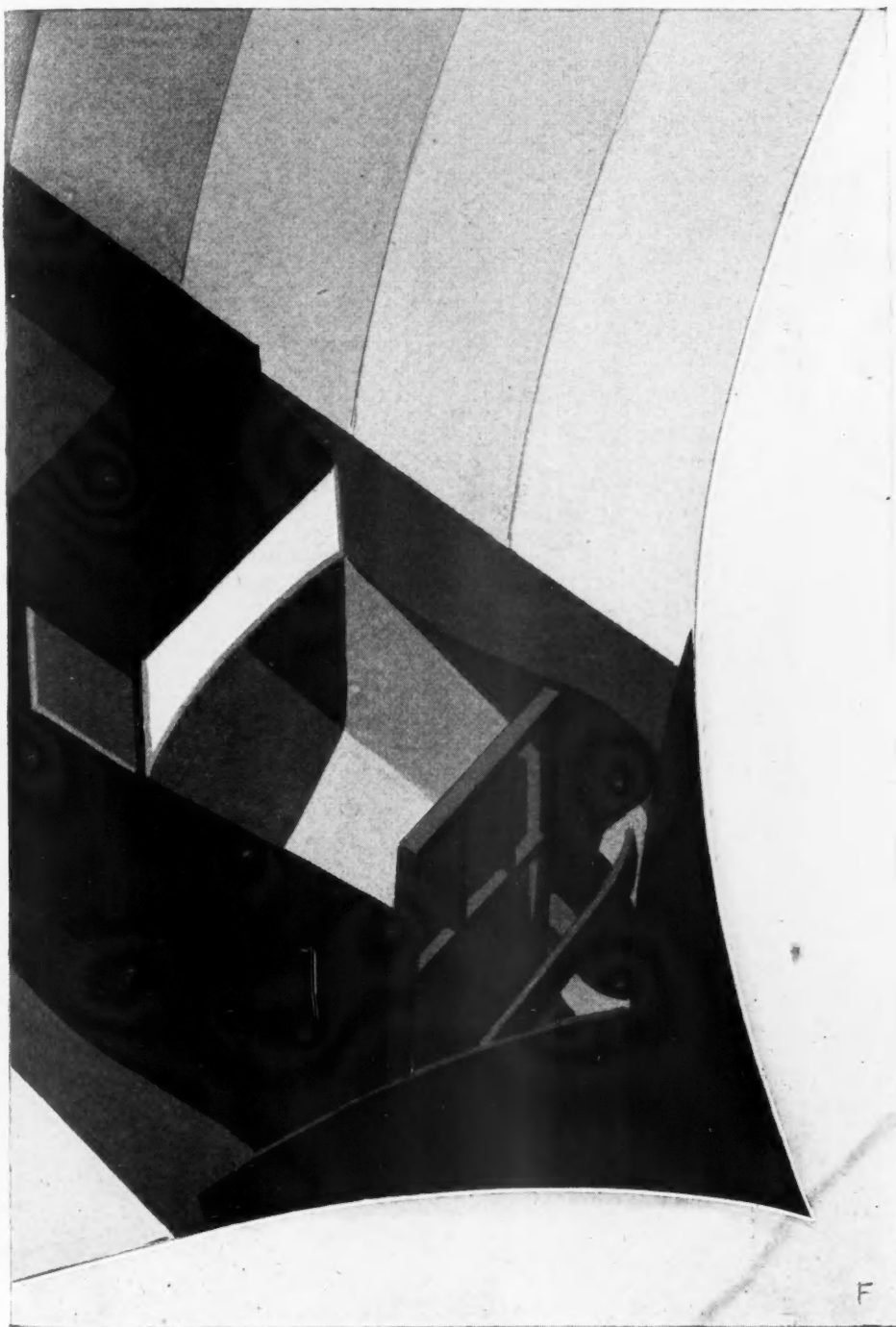
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# TO MEDIUM TRUCKS



Methods of snow removal are changing, and the trend is toward the use of trucks of medium tonnage, rather than heavy trucks and tractors.

This article, based on data collected from the 36 state highway departments within the heavy snowfall area, tells why the change is taking place, what type of snow-removal equipment is now in favor, and how much equipment is required for keeping a given section of highway open throughout the year.

The Snow Removal Report for the Winter of 1928-1929, of the Bureau of Public Roads, U. S. Department of Agriculture, of which this article is a part, shows that snow was removed from 160,850 miles of main highways in the 36 snow belt states at a total cost of nearly \$6,500,000. Trucks numbering 6865 were employed, in addition to those owned by municipalities and transportation companies, which were not reported.

By H. G. MCKELVEY

(Division of Construction, Bureau of Public Roads, U. S. Department of Agriculture)

# THE TRUCK IS A

By SAUNDERS JONES

*vice-president, The White Company*

WE have heard a great deal about the social effect of the passenger car, but what of its brother, the commercial car? Perhaps it never occurred to the average operator that his truck has a social influence wherein lies one of the greatest opportunities for the future development of motor transportation. Perhaps it does not occur to him that the transporting of the world's goods by truck is in many respects still in its infancy, and that the key to a greater future success is in appreciation of this so-called social relationship and imagination to keep ahead of its development.

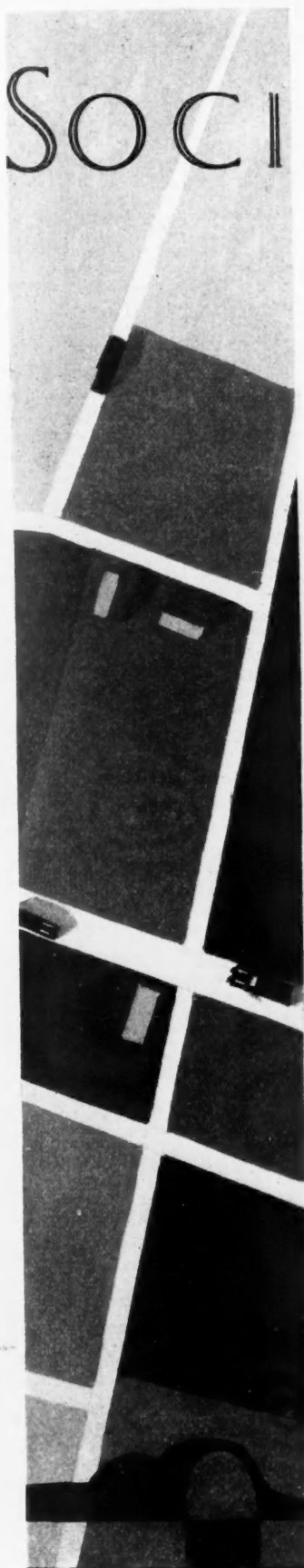
Much has been said from time to time about the shifting of population from crowded cities out into suburban and country areas, every discussion of the subject carefully pointing out that the thing which chiefly has made this possible is the family-owned passenger car. Invariably, however, the fact is overlooked that it is the truck which actually makes it feasible for people to live in otherwise isolated communities by providing the means of transportation for the necessities of life.

It was not so long ago that the average man was compelled to stick pretty close to his daily job. The well-to-do man who could afford to buy a home in communities outside the city, but served by steam railroads or electric interurban lines, managed a partial escape from the congested centers, but unless he had a white-collared job with fairly generous hours, his escape was only partial, as both the congestion and the cost of living were city-like wherever he went.

The gasoline engine liberated mankind to such an extent that as



# SOCIAL INFLUENCE



There's drama in this business of selling truck transportation. The truck is more than merely a vehicle for hauling goods. We know that its flexibility has favorably affected distribution. But how many are aware of the extent to which it has affected social conditions?

Read this article and you will know its chief purpose is to show the men in the industry that they have cause to be proud of their connection with the business of selling trucks.

soon as it was developed to the point where a motor car might be expected to run dependably three or four consecutive days, population started to flow from the large cities like lava from the sides of an erupting mountain. The flow was very much the same, too, in that it spread everywhere, guided almost entirely by individual taste for beauty or low real estate and living values.

The family car, of course, is what carried folks to quiet, outlying districts, where they could build or buy cheaply. They drove to comparatively isolated locations and set up confidently, knowing that within a short time the section would be made livable with the thousands of services necessary to the family of today.

Doubtless, very few of those who fold their tents and roll away from the city ever give thought to the fact that their newly founded homesites would be sorry substitutes if it were not for the development of trucks and the improvement of roads to bear them. In other words, while the passenger car brought them there, it is the commercial car which keeps them there—trucks to haul the necessities and luxuries they demand and buses to help meet a new crisis developing in city traffic because of the commuting passenger vehicle.

In earlier days the proportion of services available in a community was in inverse ratio to its distance from the railroad. If you wanted to be "out in the country," you

went without light, water, sewers, modern stores, movies and what-not. The motor truck made these things available to any site.

A significant indication of the extent to which this is true is found in the fact that the things once classed as luxuries—or, at best, mere advantages—are now considered first-class necessities to the average man wherever he lives. First-run motion pictures, delicatessen shops, fresh daily and Sunday papers from the large cities, high-pressure drug-department stores and up-to-date bazaars and shops with all the latest style offerings, are a few of these. Motor transportation plays the major role in bringing them all into the neighborhood of the man who has escaped from the other features of city life.

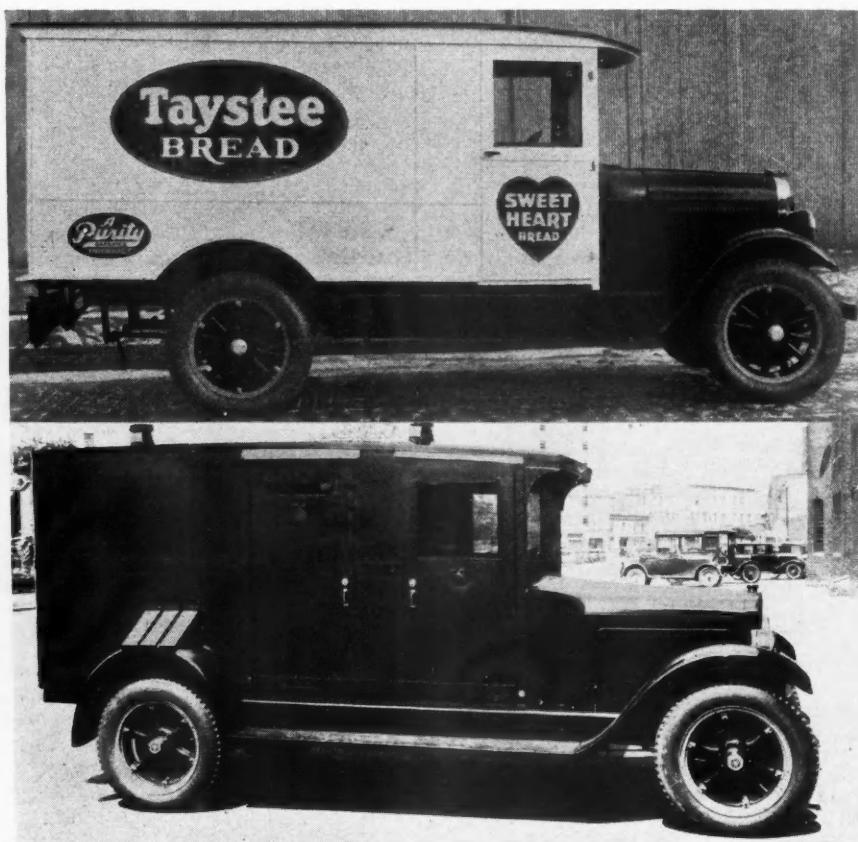
This effect is especially noticeable in the forwarding of fresh foods and perishable commodities of all kinds. So highly developed is motor transport of such things that there are many communities wherein milk is collected by truck from the farmer on the outskirts of a village, rushed to the city, treated to all the modern legal rites, bottled and trucked back to be delivered on the doorstep of the former city man who now lives in the center of the same village in a modern cottage equipped with every service a city home could boast.

Even the village movie owes the fact that it has more changes per (Turn to page 72, please)



# AIR JACKETED BODY

Improved Design, Futuristic Finish and  
Novel Use Shown in Four Bodies



TOP: FIG. 1—PLYMOUTH STANDARD BAKERY BODIES CAN BE CHANGED TO MEET INDIVIDUAL DEMANDS. INTERIORS ARE FITTED WITH TRAYS OR SHELVES. ABOVE: FIG. 2—AIR DUCTS UNDER THE VISOR AND TWO STEEL ROOF VENTILATORS ASSURE CIRCULATION OF FRESH AIR IN THE SIEBERT ARMORED BODY

## Bakery Body

A ventilated air space surrounding the entire loading section is the feature of a special bakery body built by the Plymouth Body Works, Plymouth, Ind. This construction is designed to preserve baked goods in transit (Fig. 1).

The entire frame and all wood parts are made of seasoned oak and ash. All joints are glued, screwed and braced with irons where necessary. Exterior panels are of  $\frac{1}{4}$ -in. Met-L-wood, which is made up of three-ply veneer and metal faced with a cloth binder between metal and laminated wood back. The floor is made dust and water-proof by laying  $\frac{3}{4}$ -in. tongued and grooved boards over a  $1\frac{3}{8}$ -in. sub-flooring. Sides and ceiling are panelled with Presdwood in order to give an air space around the entire loading space. The double rafter roof type construction allows air space between top and ceiling. Two exhaust ventilators are placed in the rear header. They are equipped with baffle plates to shunt any return currents of air away from the ventilators and prevent dust from entering the air spaces of body. Rear doors are fitted with heavy gaskets similar to those used on refrigerator bodies to seal the interior against dust.

## Smart Delivery

One of the most important developments in the close alliance between truck transportation and modern merchandising is the growing recognition of the importance of appearance in truck design and finish. In many respects the truck is an ambassador of good will from producer or retailer to consumer and the general public, and thus an important factor in adding prestige and building good will.

An outstanding example of individual treatment is a Diamond T Model 290 equipped with a stock panel body (Fig. 4) recently put in service

# KEEPS BAKED GOODS

by the Chicago branch of the Lomax Company, an old bottling and soft drink concern of that city. Following the trend of modernistic art, the body is finished in bands of bright color which range from pale cream to lemon yellow, grade to several shades of orange, then go to deep red at the top. Lettering is pale cream against the deep red background.

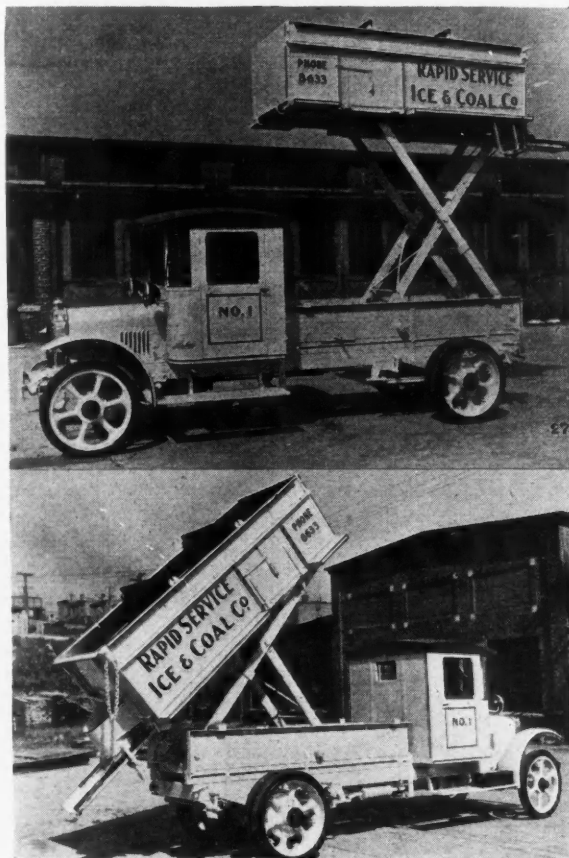
## Icing Body

A new use for an old principle is seen in the truck and body equipment recently sold to the Rapid Service Ice & Coal Company, Allentown, Pa., by the Hahn Motor Truck Co. (Fig. 3). This company, with a contract for icing refrigerator cars, approached the Hahn company for suggestions as to means for lightening the task of lifting ice transported in an ordinary truck to the high doors of the ice compartments of refrigerator freight cars. The truck company conceived the idea of using the mechanism employed for a high-lift coal dump body. The accompanying illustration shows the result of the idea. The fulcrum point of the lifting standards of a Moore Hi-Lift hoist was changed so that the body would raise level. Hoisted alongside of a freight car ice is now loaded direct into the compartments without high lifting.

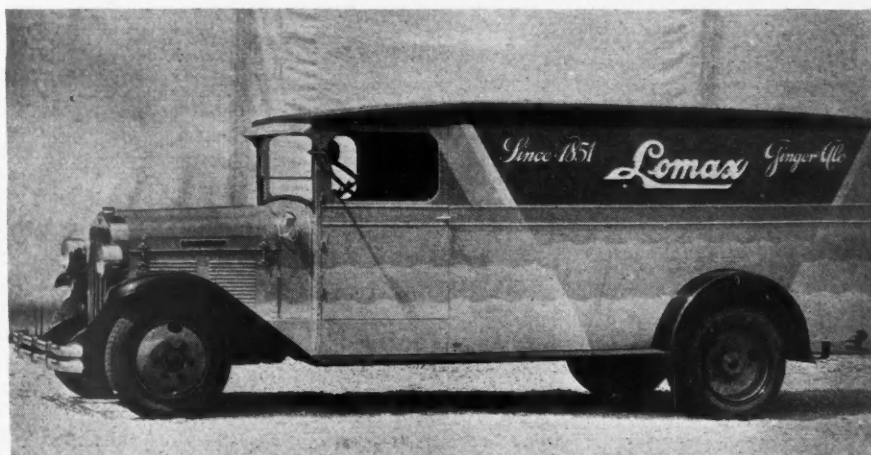
## Armored Body

The shop of Siebert, Toledo, Ohio, has designed an armored body that renders useless another weapon of the highwayman, gas. All ventilators and portholes on Siebert's standard bank and payroll body are furnished with shutters, which can be closed in a moment's time.

The accompanying illustration (Fig. 2) shows the body mounted on a 1½-ton Willys-Overland Whippet Six. Panels consist of 16-gage bullet-proof crucible steel laid over a foundation of felt and backed by ⅝ in. plywood fir. The floor and roof are of 14-gage steel laid over plywood fir and the cowl is lined with bullet-proof steel. This construction besides being bullet-proof insulates the interior against heat and cold. All glass is 1 in. armor plate. The doors have full length hinges and are equipped with Yale cylinder locks. The driver's compartment is separated from the rest of the body, but air is supplied to him and the occupants in the rear compartment by air ducts under the roof visor. Two heavy steel ventilators which project seven inches above the roof completes the ventilating system. Plates mounted at a sharp angle over the rear fenders prevent climbing onto the roof.



ABOVE: FIG. 3—BY CHANGING THE FULCRUM POINT OF THE LIFTING STANDARDS THIS CHASSIS AND BODY CAN BE MADE TO SERVE A DUAL ROLE, ICE AND COAL DELIVERY. BELOW: FIG. 4—DISTINCTIVE EQUIPMENT OPERATED BY THE LOMAX COMPANY. MODERNISTIC ART GIVES PRESTIGE TO THEIR BUSINESS



# WHAT NET PROFIT DO

$$V = \frac{F \times 100}{G \cdot D \cdot U \cdot N} = ?$$

Here's what the letters mean

- V = New truck sales volume in dollars.  
 F = Fixed expense which includes all costs charged to new truck sales which you have to pay whether you make a sale or not. They include rent, light, heat, janitor service, etc., plus a proper proportion of the general and administrative expense of the business.  
 G = Gross profit as a percentage of new truck sales. To determine gross profit, subtract from new truck sales at delivered prices what you paid the factory for the trucks, plus freight plus unloading plus cost of preparing cars for delivery. The difference is gross profit in dollars.  
 D = Direct expense as a percentage of new truck sales. It includes salesmen's pay, advertising, policy service, etc.  
 U = Used truck loss as a percentage of new truck sales. Add to what you paid for used trucks, the cost of reconditioning, selling expense, overhead, inventory write-offs, etc. Then subtract sales from the total. The difference is your used truck loss.  
 N = Net profit as a percentage of new truck sales.

Here's an Easy Way to  
Figure the Volume You  
Will Need to Realize the  
Net Income You Desire

By DON BLANCHARD

Editor Automobile Trade Journal  
and Motor Age

"If I operate on the same expense basis I did last year," he asks himself, "what volume of new trucks do I have to sell this year to break even?" On a breakeven basis, there is no net profit, so N equals zero.

Here's what he would find:

$$V = \frac{\$8,500 \times 100}{22 - 7 - 6 - 0} = \frac{\$850,000}{9}$$

Which is just another way of saying \$850,000 ÷ 9, which equals approximately \$94,500.

His new truck sales volume this year, therefore, has to be \$94,500 to break even if he runs his business on the same cost ratios as in 1929.

Then he asks himself, "On the basis of last year's costs, what will my new truck volume have to be to give me 3 per cent net on the volume?" In this case, N equals 3 per cent and this is what he finds:

$$V = \frac{\$8,500 \times 100}{22 - 7 - 6 - 3} = \frac{\$850,000}{6} = \$142,000$$

Therefore, to make 3 per cent on his volume this year, on the basis of 1929 costs, he will have to sell \$142,000 of new trucks.

Having found this out he next asks himself: "Can I sell that much this year without spending proportionately any more in direct expense or in used car losses than I did last year?" Of course, if he spends more than 7 per cent of sales on direct expense or more than 6 per cent of sales on used truck losses, he can't make 3 per cent net even on sales of \$142,000. He can make 3 per cent net on \$142,000 *only* if he holds expenses at 1929 levels.

(Turn to page 74, please)

**F**IGURE out the answer to this question for your business and you will have a pretty good idea of what you have to do to make a satisfactory net profit on truck sales this year. And bear in mind that what is said in the following discussion bears *only* on truck sales and does not take into consideration profits earned by other departments of your business. Although getting the answer may look like a complicated job, actually it isn't, because there is nothing to it but subtraction and division.

The accompanying box tells what the letters mean and the following example shows how to get the answer:

Let's assume that Dealer A wants to get the answer for his business and his 1929 operating statement looks like this:

New truck sales .....	\$100,000	..... = V
Cost of new truck sales .....	78,000	
Gross profit .....	\$22,000	which is 22% of sales = G
Fixed expense ...	\$8,500	..... = F
Direct expense ...	7,000	..... which is 7% of sales = D
Used truck loss...	6,000	..... which is 6% of sales = U
	\$21,500	21,500
Net profit on truck sales	\$500	which is 1/2% of sales = N





# THERE'S NO TRICK TO MAKING THE SHOP PAY

Here's an Experience  
That Proves It's Just a  
Case of Doing Common  
Things Uncommonly Well

By MARTIN J. KOITZSCH



**H**ERE'S my statement accumulated to date. Look it over and see for yourself whether we're making money on service."

This is the way Ray E. Nash, manager, Newark branch, Reo Motor Car Co. of New York, Inc., Newark, N. J., confidently responded when asked point-blank if his service department were doing its share in helping along the branch's grand net.

There was the seven-month record sure enough and the ink not yet dry: total service sales, \$46,573.19; total expenses, \$43,201.06, and the final result, a net profit of \$3,372.13.

A net of over \$3,000 in service and the noteworthy part of it is the fact that this record was not achieved by legerdemain, stunts or trick tactics. While Mr. Nash's capacity for hard work and enthusiastic leadership have contributed not a little, an ordinary but definite program, readily comprehensible by all, has been the big factor responsible for the accomplishment of his service department.

An analysis of Mr. Nash's program resolves itself into four major elements that are striking because of their commonness: (1) facilities, organization and personnel to provide quick and satisfactory service; (2) customer satisfaction—maintenance of amicable relations before and after the sale of a truck; (3) night service, repair specials and protective lubrication and inspection service; (4) piece work to mechanics and flat rates to customers.

There is a very definite reason why this branch has its entire service facilities organized for speed and that is, recognition of the growing demand for quick service in its many ramifications. And, when it is remembered that most of the service bills range from \$12 to \$15, it is not hard to conceive that a large part of the company's service profit is due to its quick-service set-up.

"We pride ourselves in holding 80 per cent of our customers because of our service facilities," Mr. Nash declared. "We are equipped to handle 25 jobs at a time and think nothing of working up till 10 o'clock at night to keep abreast of orders. Our shop is open to customers for service at any time and they know from experience that this is not an idle promise. Our service manager is subject to call any hour, day or night, holiday or Sunday.

"In all our service relations we strive to furnish the kind of service which will automatically bring the customer back without solicitation. We do, however, when work is slow, contact with customers through our service salesman, but in such cases we offer special jobs at special rates.

"Our policy is to give the people what they want and give it to them without holding up their jobs too long. If you do this, you won't need to worry whether they're coming back or not.

"Our customers know from experience that our organization does not consider any job too small for attention. To facilitate quick handling of small jobs, we provide what we term 'sidewalk

(Turn to page 76, please)

# REO OFFERS DEALERS EQUIPMENT SERVICE

THE REO MOTOR CAR CO. has organized an Equipment Division at the factory in Lansing, Mich., to assist its dealer organization in furthering Speed Wagon merchandising procedure in 1930. The program calls for conservative expansion of Reo truck business by an organized invasion of more or less new fields rather than the forcing of present markets.

It combines a new service to the trade with a new outlook for sales outlets and is expected to widen the Speed Wagon market in a logical expansion that involves finding new and wider uses for the already versatile Speed Wagon line.

While there is really nothing new in the principle, it involves an active, determined application of the field's problem to the manufacturing division, giving Reo dealers a fullest cooperation on the equipment situation.

Marketing the output mainly through a Distributor and Dealer organization this new Equipment Division not only provides full relief from a major sales problem in the territory, but automatically inspires a new vision to Speed Wagon salesmen.

As is the case in most organizations, 30 per cent or more of Reo's truck output has left the factory without bodies being mounted on the chassis, which with Reo's large production amounts to something big numerically.

The task of supplying so-called non-standard equipment in the past was left to the dealer who worked out his own solution. Especially to dealers in small towns this was a real problem and represented certain economic wastes. In some cases, it meant driving or shipping the chassis in less-than-carload lots to a special body builder and a redelivery expense to the dealer which was reflected in the selling price.

Upon occasion, bodies were improperly mounted from the standpoint of weight distribution, sill construction, etc., as well as amounting to a definite invitation to overload the chassis.

With this in mind, also that the efficiency of the chassis is more or less measured by the efficiency of the body or the equipment, Reo has been making a comprehensive study

(Turn to page 76, please)

*The Commercial Car Journal  
and Operation & Maintenance*



Contributes Innovation as Progressive Step in Transportation Merchandising in New Fields

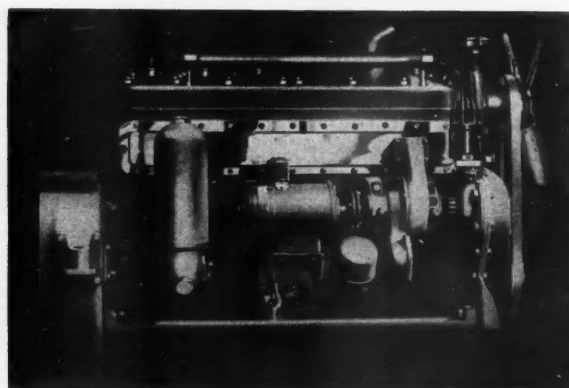
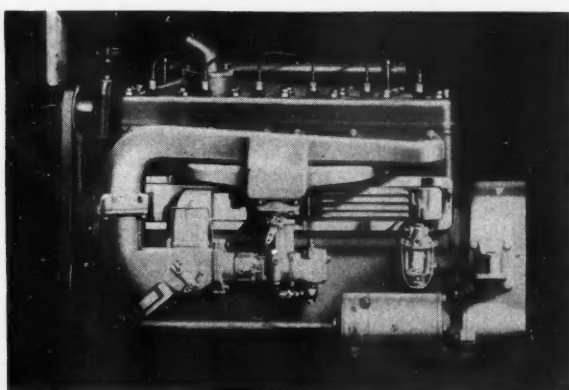
By CARL PARKER

(Assistant Sales Manager in Charge of  
Reo Speed Wagon Sales)

January, 1930



# BUDA FEATURES



AN AIR-CLEANING AND CRANKCASE VENTILATING SYSTEM IS BUILT INTO THE VALVE COVER PLATE OF THE SIX-CYLINDER ENGINE, SHOWN AT TOP. REVOLVING PACKING WHICH IS NOT ADJUSTABLE IS USED IN THE NEW WATER PUMP, ILLUSTRATED ABOVE

## New Four and Six-Cylinder "Hivelo" Engine Models Incorporate Novel Improvements

By M. WARREN BAKER

HIGH velocities, from which the trade name "Hivelo" was derived, were utilized wherever possible throughout the design of the new Buda engines for trucks. Cooling water and lubricating oil are pumped at high speed, the combustion chamber is of high-turbulence type, variable pitch springs control the valves, and power peaks have been established at 300 r.p.m.

While all five engines embody the same general features, four of them, two fours and two sixes, have many parts in common. A common cylinder stroke of  $4\frac{1}{2}$  in. and two bores,  $3\frac{1}{2}$  and  $3\frac{3}{4}$  in., make up these four engines, identified by letter H in the model symbol. Four of the  $3\frac{1}{2}$ -in. cylinders are used in Model H-173, which has 173 cu. in. displacement, and is rated at 49.5 hp. The same number of  $3\frac{3}{4}$ -in. cylinders forms Model H-199, with 198 cu. in. displacement and 57 hp. rating. Six

# HIGH VELOCITY



3½-in. cylinders make up Model H-260, of 259.9 cu. in. displacement and power output of 75 hp., while six 3¼-in. cylinders in Model H-298 contain 298.2 cu. in. and develop 86 hp.

The smaller six, Model J-214, has a displacement of 214.7 cu. in., which develops 61.5 hp., this placing it in the power range between the large four-cylinder engine and the 3½ by 4½ in. six-cylinder unit.

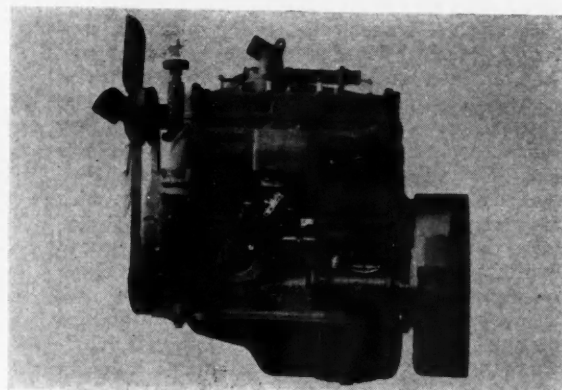
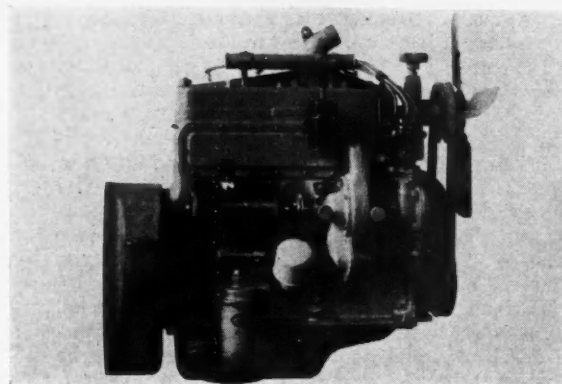
Interchangeability of parts has been carried to an unusual degree in the series, and particularly in the four models with the same stroke. These four models are equipped with crankshafts 3 in. in diameter and with main bearings of the same length. The six-cylinder engines in this group have seven main bearings, while the fours have five, there being two more intermediate bearings of the same size in the six.

Front main bearings are 1½ in. long, center 2 in. and rear 2½ in. with intermediates 1 1/16 in.

In the same fashion the camshaft bearings, four on the sixes and three on the fours, likewise are interchangeable between the two series of fours and sixes. Diameter is 2½ in., except the rear, which is 1½ in.

Connecting rods, piston pins and valves are interchangeable throughout all four models, and pistons are interchangeable between cylinders of the same bore in either four or six-cylinder engines.

Rods are I-beam section, having a center-to-center length of 9½ in. Rod bearings are 2.125 in. diameter and 1.625 in. long. Pistons are 3¼ in. long and are fitted with four rings, all above the pin, the lower of which is of the oil-control type. Piston pin bearings are 1½ in. diameter. Pins float in both rods and pistons and are retained by snap rings at each end. They are lubricated through drilled rods.



FOUR-CYLINDER ENGINES ARE SIMILAR IN DESIGN TO THE SIXES. THE EXHAUST MANIFOLD OPENS AT THE FRONT AND THE INTAKE IS HEATED BY EXHAUST GAS. FAN BELT ADJUSTMENT IS AT THE TOP OF THE BRACKET

# BUDA FEATURES HIGH VELOCITY

## Specifications of New Buda Line

	H-173	H-199	J-214	H-260	H-298
No cylinders .....	4	4	6	6	6
Size cylinders .....	3½ x 4½	3¾ x 4½	3¾ x 4	3½ x 4½	3¾ x 4½
Displacement .....	173.2	198.8	214.7	259.9	298.2
Horsepower at 3000...	49.5	57	61.5	75	86
Torque at 1000.....	108 ft. lb.	125 ft. lb.	135 ft. lb.	162 ft. lb.	186 ft. lb.
No. main bearings ...	5	5	7	7	7
Diameter .....	3	3	2½	3	3
Length front .....	1½	1½	1¾	1½	1½
Length center .....	2	2	1¾	2	2
Length rear .....	2½	2½	1¾	2½	2½
Length intermediates	1 1/16	1 1/16	15/16	1 1/16	1 1/16
Diameter crankpin ...	2.125	2.125	2.00	2.125	2.125
No. camshaft bearings.	3	3	4	4	4
Diam. (except rear) ..	2½	2½	2	2½	2½
Diameter rear .....	1½	1½	1½	1½	1½
Connecting rod length.	9½	9½	8½	9½	9½

Exhaust valves are of silchrome steel with clear diameter of 1½ in., and inlets of chrome nickel steel, 1¼ in. diameter.

The Model J-214 six-cylinder engine has a seven-bearing crankshaft, the diameter of which is 2½ in. and lengths, front, 1¾ in.; four intermediates, 15/16 in.; center, 1¾ in., and rear, 1¾ in. The camshaft bearing has a diameter of 2 in., except the rear, which is 1½ in., and lengths, front to rear, 1 7/32 in., 1 in., 1 in. and 1 in. I-beam section connecting rods are 8½ in. center to center and the lower rod bearings are 2 in. in diameter and 1½ in. long. Piston pin bearings are 1 in. in diameter and 2 1/16 in. long. Pistons are of the same length, 3¾ in., and cast of grey iron of light weight as in the other four models.

Front-end drive is by gear or chain at the option of the purchaser on all engines in the series.

Metric thread spark plugs are used in the removable cylinder heads of both sixes and fours. Provision is made for battery ignition. Carburetor flanges are S.A.E. standard, 1 in., 1¼ in. and 1½ in. diameter, according to cylinder dimensions. The manifold is provided with a hot spot with manual heat control.

A short, heavy crankshaft of large diameter is embodied in all five engines. Shortness and sturdiness of the shaft reduces possibility of torsional vibration. The crank pins overlap the main bearing journals, thus further stiffening the shaft structure. Although the main bearings are relatively short, the large diameter allows the usual total area.

Main bearings are shimless interchangeable type. Manufacturing limits on essential bearing fitting dimensions are 0.0005 in., and as a result, bearings may be installed without hand-fitting or removing crankshaft. Connecting rod bearings are of babbitt spun directly into the rod ends.

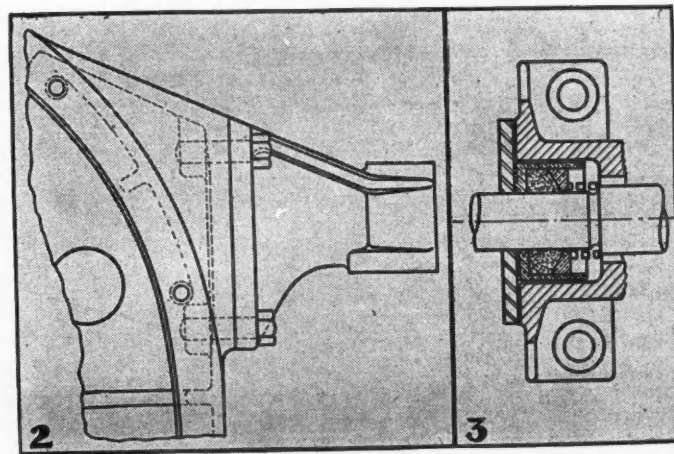
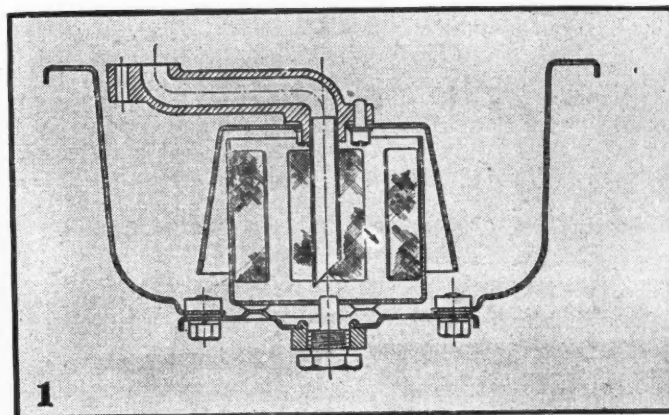
An air cleaner that also ventilates the crankcase is built in the engine. The valve cover plate is constructed with screened louvers at the rear end and is built in two plate sections, the inner half of which is provided with dust screens and acts as a baffle plate which is provided with several holes communicating with the crankcase. The front section of the plate is connected to the carburetor air intake which thus draws vapors from the crankcase and mixes them with the incoming charge.

Lubrication is supplied by a large gear-type pump through drilled passages, even the main feed line being drilled the length of the crankcase. There are no loose pipes in the system. Provision is made for standard oil filtering systems. The front-end assembly is lubricated through a hollow shaft with discharge holes in the rim of the gear or sprocket. An oil pool is provided under the crankcase gear or sprocket.

Water-jacketing has been held to a minimum to reduce the warming-up period. Coupled with a large-capacity water pump, this arrangement gives rapid flow of water over the heated surfaces.

Cylinders are cast in block and integral with the crankcase upper half, of chrome nickel alloy iron.

All the Hivelo series engines are constructed for a modified three-point mounting.



TOP: THE OIL SCREEN IS ENCLOSED IN A VACUUM CAP. IF THE SCREEN BECOMES CLOGGED OR THE OIL IS TOO STIFF WHEN STARTING IN COLD WEATHER TO PASS THROUGH IT THE OIL PILES UP OVER THE SCREEN

ABOVE, LEFT: CRANKCASE ARM BOLTED TO HOUSING TO PREVENT BREAKAGE. ABOVE, RIGHT: WATER PUMP PACKING WHICH ROTATES WITH THE SHAFT IS NOT ADJUSTABLE



# STERLING PUTS SHAFT DRIVE ON NEW SIXES

## Specifications of New Sterling

	DB15	DW20
Capacity .....	3½ to 4½ ton	5½ to 6½ ton
Wheelbase, standard .....	163 in.	166 in.
Optional .....	133, 151, 177 in.	154, 180 in.
Chassis weight .....	5775 lb.	.....
Tires, front .....	36 x 4 solid	36 x 5 solid
Rear .....	36 x 8 solid	36 x 10 solid
Optional, front .....	36 x 8 pneumatic	38 x 7 pneumatic
Optional, rear .....	36 x 8 dual	38 x 7 dual
Engine, make .....	Waukesha	Waukesha
Size .....	6-3¼ x 4½	6-4¾ x 5¼
Displacement .....	298 cu. in.	462 cu. in.
Hp. and r.p.m. ....	64 at 2200	88 at 2000
No. of main bearings .....	7	7
Total bearing length .....	12½ in.	13¾ in.
Lubrication, type .....	pressure	pressure
Carburetor .....	Zenith	Zenith
Gasoline capacity .....	20 gal.	28 gal.
Ignition, make .....	Leece-Neville	Leece-Neville
Generator, make .....	Leece-Neville	Leece-Neville
Starter, make .....	Leece-Neville	Leece-Neville
Radiator, type .....	tubular	tubular
Clutch, make .....	Brown-Lipe	Brown-Lipe
Type .....	multiple disk	multiple disk
Transmission, make .....	Brown-Lipe	Brown-Lipe 55
Speeds .....	4	4
Universal, make .....	Spicer	Spicer
Rear axle, make .....	Timken	Timken 65704
Type .....	full-floating	full-floating
Drive .....	bevel	worm
Steering gear .....	Ross	Ross
Type .....	cam and lever	cam and lever
Service brakes .....	4-wheel Lockheed	4-wheel Lockheed
Method of operation .....	hydraulic	hydraulic
Auxiliary operation .....	B-K booster	B-K booster
Hand brake, location .....	propeller shaft	propeller shaft
Springs, front .....	48 x 3	48 x 3-10
Rear .....	54 x 3	54 x 3-14
Auxiliary .....	.....	37½ x 3-8
Frame, type .....	steel, wood lined	steel, wood lined
Size .....	7 in.	7 in.
Body length, standard .....	13 ft.	13 ft.
Optional .....	L.W.B. 15 ft.	L.W.B. 15 ft.

## Adds Two Heavy-Duty Models and Offers Engine Size Option on Heavier

BY adding a 3½ to 4½-ton bevel drive model and a 5½ to 6½-ton worm drive chassis, the Sterling Motor Truck Co., Milwaukee, has rounded out its line to include worm, bevel and chain drive chassis ranging from 1 to 12 tons. Except for the rear, both models embody similar units, but of different capacity, including six-cylinder engines, multiple disk clutches, four-speed transmissions, four-wheel hydraulic brakes equipped with boosters and pressed steel wood-lined frames. They differ decidedly in the rear axle construction, a bevel type rear being used in Model DB15 and worm in Model DW20, the heavier of the two.

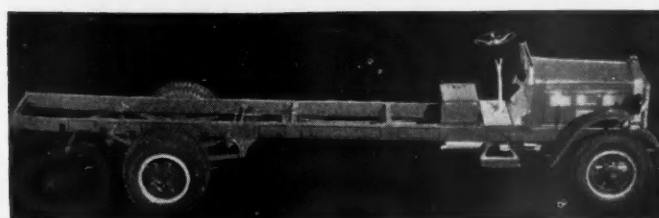
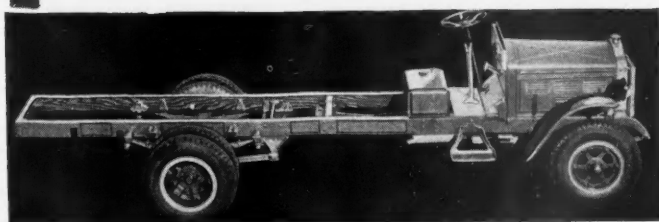
Model DW20, which is furnished in three wheelbases, 166, 180 and 154 in., is available with either 4¾ x 5¼-in. engine developing 88 hp. at 2000 r.p.m. or a 4 x 4¾-in. engine developing 71 hp. at 2000.

Model DB15 is a lighter edition of the heavier model and is designed for speedy delivery. It is supplied in several wheelbases, 163, 151, 177 and 133 in. and powered by a 3¾ x 4½-in. engine developing 64 hp. at 2200 r.p.m.

Service brakes are four-wheel Lockheed hydraulic, amplified with vacuum boosters with 16 x 2½ in. drums in front and 17¼ x 5 in. drums at rear. The parking brake is mounted on the propeller shaft and acts on a 11 x 4-in. drum.

As is characteristic of all Sterling models the 7-in. pressed steel frames of these models is wood-lined with oak and all cross members are bolted instead of riveted. The cowl, dash, and floorboards are of cast aluminum and the radiator shell is chromium-plated in both models.

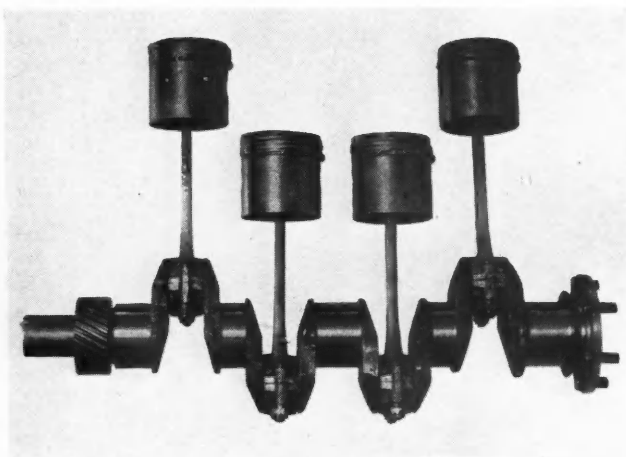
Standard equipment includes oil gage, oil side and tail lamps, speedometer, horn, air cleaner, Gascolator and oil filter. Extra cost equipment comprises cab, starter, generator, ammeter, electric lights, bumper, radiator guard, tire pump, towing devices, skid chains and auxiliary 3-speed transmission.



LEFT, ABOVE: MODEL DW20 HAS AN ENGINE SIZE OPTION AND A WORM DRIVE REAR. THE 3½-TON MODEL DB15, SHOWN BELOW, IS BEVEL-DRIVEN. FRAMES OF BOTH MODELS ARE WOOD-LINED.

# DIAMOND T INVADES

Two Heavy-Duty 1-Tonners, a "Four" at \$785 and a "Six" at \$885  
Celebrate Silver Anniversary



RIGID CRANKSHAFTS ARE USED IN BOTH FOUR AND SIX-CYLINDER ENGINES. THE SHAFT ABOVE, FROM THE FOUR, HAS FIVE MAIN BEARINGS 3 IN. IN DIAMETER. SWEEPING FENDERS AND HORIZONTAL LOUVERS DISTINGUISH THE NEW 1-TON MODELS

THE Diamond T Motor Car Co. inaugurates its Silver Jubilee year with presentation of two entirely new one-ton models designed to offer the advantages of truck engineering to the lower-price market. Model 200, priced at \$785, incorporates one of the new four-cylinder Buda engines and the companion model, 215, is of identical construction and rating except that it is powered by a new series six-cylinder Buda engine and has six inches more wheelbase to accommodate the longer engine. Model 215 lists at \$885 f.o.b. factory.

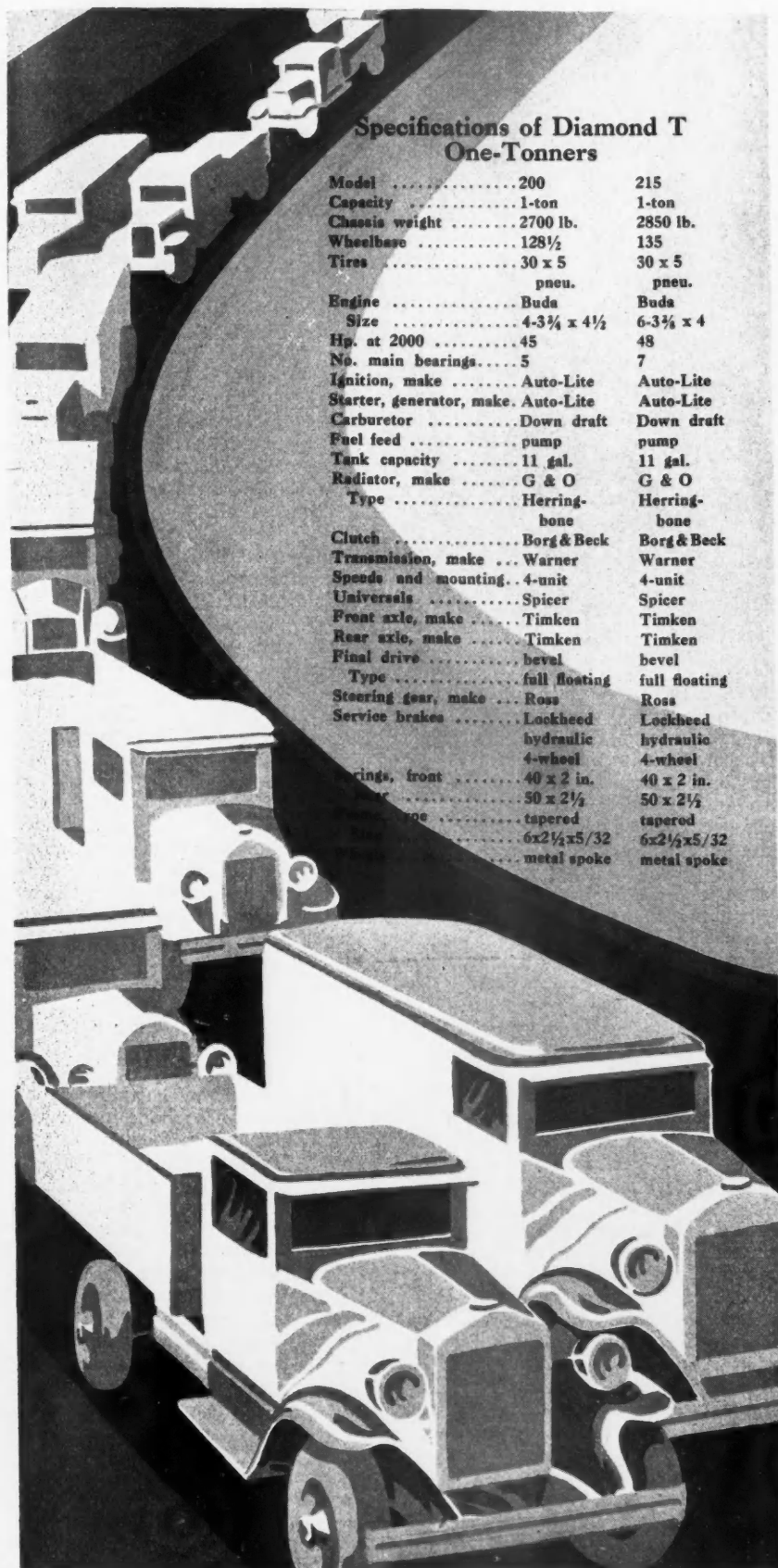
Four-speed transmissions, full floating rear axles, 6-in. tapered frames, four-wheel hydraulic brakes and helper springs are embodied in both models.

The four-cylinder engine,  $3\frac{3}{4} \times 4\frac{1}{2}$  in. with piston displacement of 19 cu. in., develops 45 hp. at 2000 r.p.m. and upwards of 55 hp. at maximum. Crankshaft is 3 in. in diameter and is carried in five main bearings. A deep wall crankcase of nickel alloy iron has wide webs to the bearings. Camshaft and accessory shaft are gear driven.

Cylinders of the six-cylinder engine are  $3\frac{3}{4} \times 4$  in., making piston



# LOW-PRICE FIELD



## Specifications of Diamond T One-Tonners

Model .....	200	215
Capacity .....	1-ton	1-ton
Chassis weight .....	2700 lb.	2850 lb.
Wheelbase .....	128½	135
Tires .....	30 x 5	30 x 5
	pneu.	pneu.
Engine .....	Buda	Buda
Size .....	4-3¼ x 4½	6-3¼ x 4
Hp. at 2000 .....	45	48
No. main bearings.....	5	7
Ignition, make .....	Auto-Lite	Auto-Lite
Starter, generator, make.	Auto-Lite	Auto-Lite
Carburetor .....	Down draft	Down draft
Fuel feed .....	pump	pump
Tank capacity .....	11 gal.	11 gal.
Radiator, make .....	G & O	G & O
Type .....	Herring-bone	Herring-bone
Clutch .....	Borg & Beck	Borg & Beck
Transmission, make ..	Warner	Warner
Speeds and mounting..	4-unit	4-unit
Universals .....	Spicer	Spicer
Front axle, make .....	Timken	Timken
Rear axle, make .....	Timken	Timken
Final drive .....	bevel	bevel
Type .....	full floating	full floating
Steering gear, make ..	Ross	Ross
Service brakes .....	Lockheed hydraulic	Lockheed hydraulic
	4-wheel	4-wheel
Wheels, front .....	40 x 2 in.	40 x 2 in.
	50 x 2½	50 x 2½
	tapered	tapered
	6x2½x5/32	6x2½x5/32
	metal spoke	metal spoke

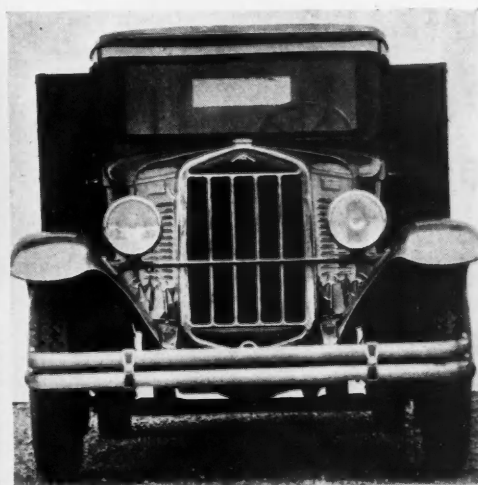
displacement 214 cu. in. Brake horsepower is 48 at 2000 r.p.m. and more than 60 at maximum. Details of construction are similar to those of the four-cylinder engine including complete pressure lubrication. The crankshaft, which has seven main bearings, is 2½ in. diameter.

Axles are of Timken make, the front incorporating roller bearing mounted king pins. The rear axle embodies a one-piece cast housing and eight Timken bearings. It is of the bevel-gear full-floating type.

Four-wheel Lockheed hydraulic brakes are fitted with molded lining. Drums are 15 by 2 in. The parking brake is of the contracting band transmission type.

The frame is of special design of tapered section to provide strength with light weight. A depth of 6 in. is provided at point of maximum stress and there are four cross members. Cowl and frame layout have been designed to accommodate without change standard types of production bodies and proper load distribution is provided for 8 ft. 6 in. bodies.

Shackles with compression type rubber bushings which control side-sway in addition to spring reaction are employed. The rear suspension includes helper springs.



A SPECIAL CAB HAS BEEN DESIGNED BY THE COMPANY TO COMBINE SMART APPEARANCE WITH DURABILITY. HOOD AND COWL ARE STREAMLINED TO MATCH THE CAB AND HERRINGBONE TYPE RADIATOR, WHICH IS FINISHED IN CHROMIUM



# AFTER

## Breaks

Back in the now historical odious October and noxious November when the stock market developed a case of galloping heaves and threw riders left and right as if they were just so many Princes of Wales, there was born a concern for the future of business and the nation. Fortunately, Mr. Hoover was on hand to take the reins of leadership. He summoned business leaders. Out of these Hoover huddles came the reassuring news that industry, aware it was face to face with a critical situation, was convinced that the best way to lick it was to engage in an extensive construction program.

Nothing could have been made more to the order of the truck industry. Therefore, the optimistic view of 1930 reflected in the opening pages of this issue is justified.

Some chronic skeptics may claim that the captains of industry participating in the Hoover huddles reached into the old hokum bucket for their predictions. The answer to that, if you know your Herbert Hoover, is a huge "tut-tut" and a decisive "pooh-pooh."

The breaks so far are with the truck industry, and every dealer should muster his forces to take full advantage of them.

## Going

Gradually with the passing years the motor truck is conquering its last major frontier—that of the railroads. The slow but certain eradication of a foolish and costly prejudice is indicated by the growth in the number of carriers using trucks and by the results of studies conducted by the Motor Transport Division of the American Railway Association.

Truck service is now being offered by 37 Class 1 carriers as compared with 33 last year. Vehicles used in this service now total 5861 as against 4863 a year ago, and truck route-mileage stands at 6677, as compared with 2725.

It was the general impression of a committee of the Motor Truck Section, Motor Transport Division, A.R.A., which reported at the recent Toronto meeting, that applications of the motor truck are almost entirely in the realm of terminal work. "The reason for this situation," said the report, "is that



the railroads have approached the question of truck use almost entirely from the angle of savings in operating expenses. . . . Traffic considerations have not been given the same weight in consideration of truck problems as in motor coach problems. . . . With these two diametrically opposed plans it is reasonable to assume that the shipper will use the kind of service which appeals to him, even though at times it may cost him more money."

In meeting passenger competition the railroads organized subsidiary motor coach companies. The committee, therefore, naturally assumed that "the remedy being applied with respect to passenger transportation would be equally efficacious with respect to freight transportation, and that the establishment of trucking subsidiaries to give services similar to those of private trucking companies in territories where trucking companies are real competitors of the railroads might well have the serious thought of railway executives."

It is a fact that for the most part trucks now operated by the railroads perform no service for the patron which he could not procure from the trains for which these trucks have become economical substitutes. So far traffic considerations have been ignored, but it may be expected that the activities of the Motor Transport Division will have a converting effect.

# HOURS

Besides, it's about time for those railroads which have taken the plunge into the placid waters of store-door delivery to begin yelling "Come on in; the water's fine!"

## Service

The record height reached last year by the mercury in the truck sales thermometer is evidence that the trade was, slangily speaking, "plenty hot." Nothing so complimentary can be said in regard to service which (don't let it throw you) many dealers still look upon as a necessary evil that (curses) is simply a drain on truck sales profits. Neither the sadness nor the truth of this condition can be denied. The dealer who looks upon his service department as a wart is naturally more inclined to cut it off than to tolerate it. So that the service department goes from bad to worse, and finally to the dogs.

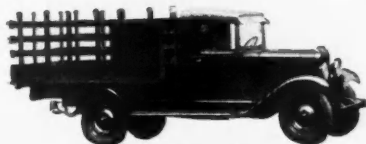
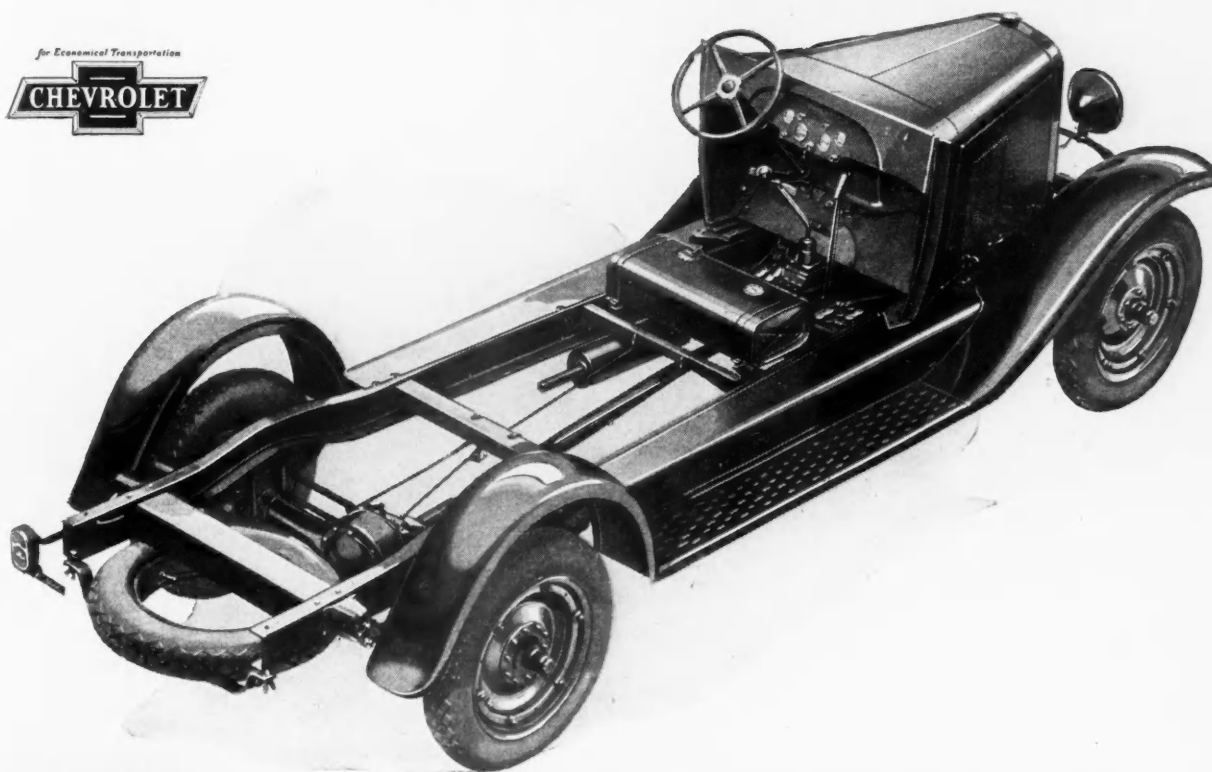
Yet it is to maintenance business that the truck dealer should logically look for more profits. More than 3,000,000 trucks are roaming the highways of the country. They are all periodically in need of service, and they must be kept running. So far as we know, there has been no organized effort on the part of truck users to compel dealers to service their vehicles at cost or at a loss. Therefore, if a truck dealer operates his shop at a loss, it's nobody's fault but his own.

The dealer who won't admit this as fact can claim, as his only other excuse, that a non-paying service shop is a misfortune inherent in the truck business. Which isn't at all true, and which this publication will prove as false in a series of articles which begins in this issue. The slogan we wish our dealer readers to adopt is "Make Money from Maintenance." And to help them we will show what service business is to be got; how to go about getting it, and how to handle it. We will have the co-operation of maintenance experts. We will track the service faults of truck dealers to their lair and slay them if dealers will only lend the absolutely necessary helping hand.

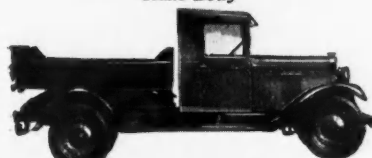
Is there a truck dealer who doesn't wish to make money from maintenance? There shouldn't be. Therefore we commend the series to the entire trade, confident that we in our turn are performing a profitable service.—G.T.H.

# Announcing the New CHEVROLET

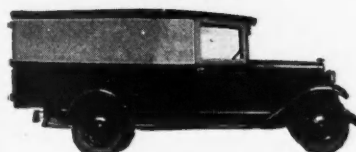
## Six Cylinder TRUCKS



The new Chevrolet six-cylinder 1½ Ton Truck Chassis equipped with Stake Body



The new Chevrolet six-cylinder 1½ Ton Truck Chassis equipped with Dump Body



The new Chevrolet six-cylinder 1½ Ton Truck Chassis equipped with Panel Body

Again, Chevrolet has used the savings from its great volume production to bring to American business the greatest commercial car value in its history—

—a stronger, sturdier, more powerful line of six-cylinder trucks . . . at sensationally low prices!

Every factor that makes a commercial car desirable has been refined and improved in these new trucks. The six-cylinder valve-in-head motor has been increased to 50 horsepower! The brakes have been enlarged and improved—with the front brakes of the internal-expanding type! Steering has been made easier and steadier! The rear axle is heavier and stronger! And throughout the chassis, scores of detailed improvements add to strength, durability and economy.

See these trucks at your Chevrolet dealer's—today. Check their new features. Get a trial load demonstration. And remember—no matter what your business—there is a body type to meet your particular need.

Chevrolet Motor Company, Detroit, Michigan  
Division of General Motors Corporation

A SIX IN THE PRICE RANGE OF THE FOUR

The Commercial Car Journal  
and Operation & Maintenance

January, 1930

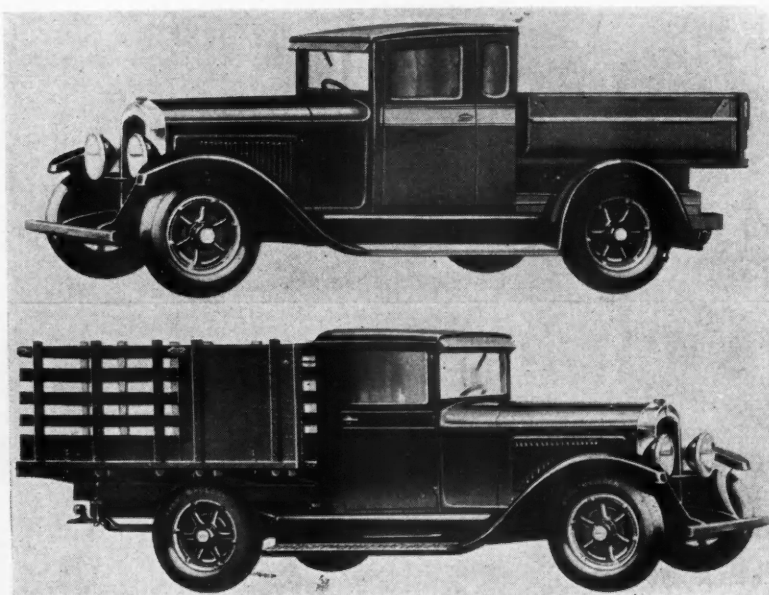
# WILLYS ADDS KNIGHT

## Specifications of New Willys Sixes

	C-101	T-103
Price	\$695	\$825
Capacity	1½-ton	1½-ton
Chassis weight	2675 lb.	2808 lb.
Wheelbase	131 in.	131 in.
Tires, standard	30 x 5 in.	30 x 5 in.
Extra	32 x 6 in.	32 x 6 in.
Engine	Own	Own
Size	6-3¼ x 3½ in.	6-2 15/16 x 4½ in.
Displacement	193 cu. in.	177.9 cu. in.
Hp. and r.p.m.	65 at 3400	53 at 3000
Compression ratio	5.6 to 1	5.5 to 1
Valve arrangement	L-head	Sleeve
No. main bearings	4	7
Diameter and total length	2¼ x 6 15/16	2¼ x 11 15/16
Piston material	Cast iron	Aluminum
No. piston rings	3	4
Starting, lighting & ignition	Auto-Lite	Auto-Lite
Spark plug size	Metric, 18mm.	¾-18
Carburetor	1½ Tiltetson	1 in. Tiltetson
Feed and make	Vacuum, S.W.	Vacuum, S.W.
Gasoline tank	11 gal.	11 gal.
Radiator, make	Feddere	Own
Type	Cellular	Cellular
Clutch, make	Borg & Beck	Rockford
Type	Plate	Plate
Transmission, make	Fuller-Covert	Fuller-Covert
Mounted and speeds	4-unit	4-unit
Universals, make	Mechanics	Mechanics
Type	Metal	Metal
Rear axle, make	Clark	Clark
Drive	Spiral bevel	Spiral bevel
Type	¾ floating	¾ floating
Ratio, standard	6¼ to 1	6¼ to 1
Torque and drive	Springs	Springs
Steering gear, make	Own	Own
Type	Worm and gear	Worm and gear
Service brakes	4-wheel, mech.	4-wheel, mech.
Front	Bendix, internal	Bendix, internal
Rear	Own, external	Own, external
Drum size, front	11 43/64 in.	11 43/64 in.
Drum size, rear	14 in.	14 in.
Hand brake, location	Rear wheels	Rear wheels
Type and size	Internal, 14 in.	Internal, 14 in.
Springs, size, front	36 x 1¼-9	36 x 1¼-9
Size, rear	45 x 2½-13	45 x 2½-13
Frame, size	6 x 3¼ x 5/32	6 x 2¼ x 5/32
Length, cab to center rear axle	51 25/32 in.	51 25/32 in.
Length, cab to end of frame	86 21/32 in.	86 21/32 in.

WITH the addition of two new sixes in the 1½-ton class, one powered by a 65 hp. L-head and the other by a 53 hp. sleeve-valve engine, the Willys-Overland line now includes six models extending from ½ to 2½ tons. With the exception of the engine and clutch both new models are similar in construction, being equipped with four-speed transmissions, four-wheel mechanical brakes, bevel axles and 30 x 5 in. pneumatic tires. Both models are designed to accommodate a wide variety of body types. The company is building five standard bodies for mounting on either chassis, each having a common wheelbase of 131 in. Body types include a panel body, fully enclosed, with two rear doors; canopy top express body with curtains at the sides and rear; screen body with gate that locks; open express body and platform stake body.

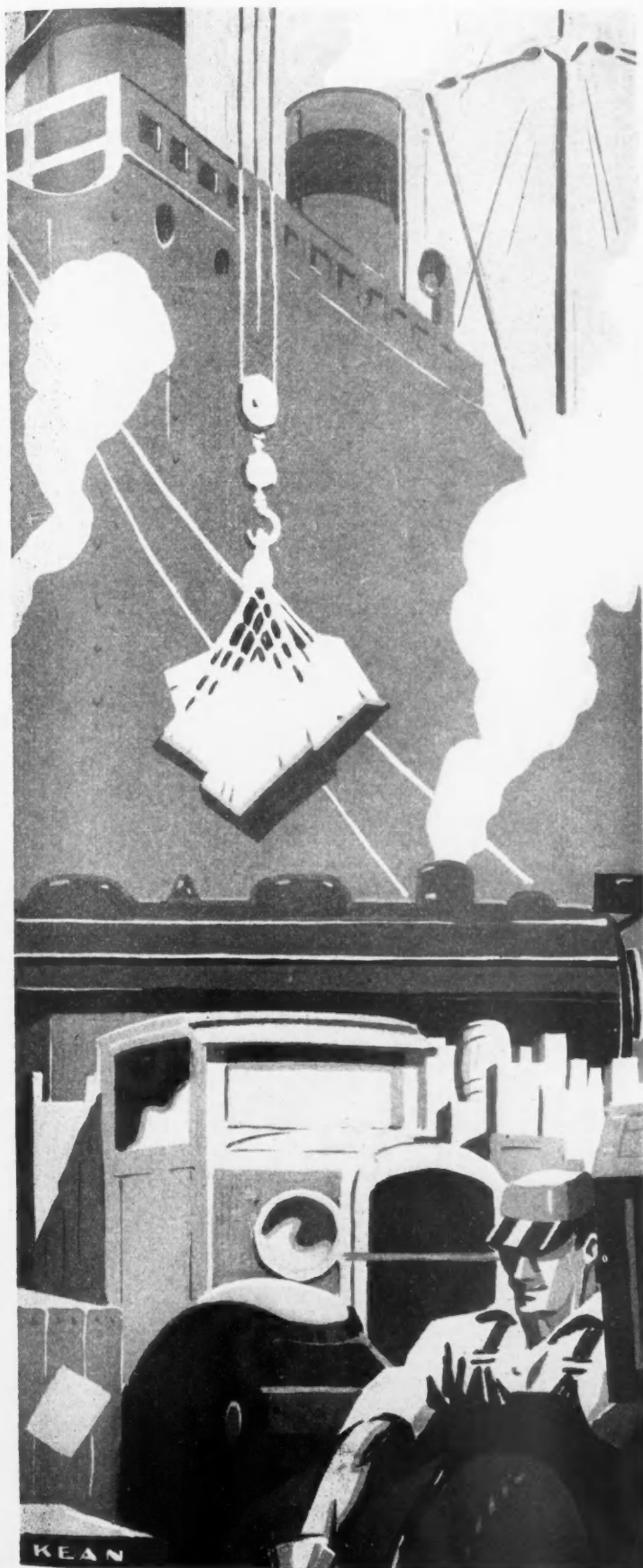
The Willys Six, which embodies the L-head engine, is designated as Model C-101. The engine of this model is entirely new and develops 65 hp. at 3400 r.p.m. It has 3¼ x 3½ in. bore and stroke and a piston displacement of 193



WILLYS NEW 1½-TON, SIX-CYLINDER CHASSIS EQUIPPED WITH DUMP AND STAKE BODIES



# AND L-HEAD SIXES



## Both Models Enter 1½ Ton Class With Same Wheelbase and 5 Body Styles

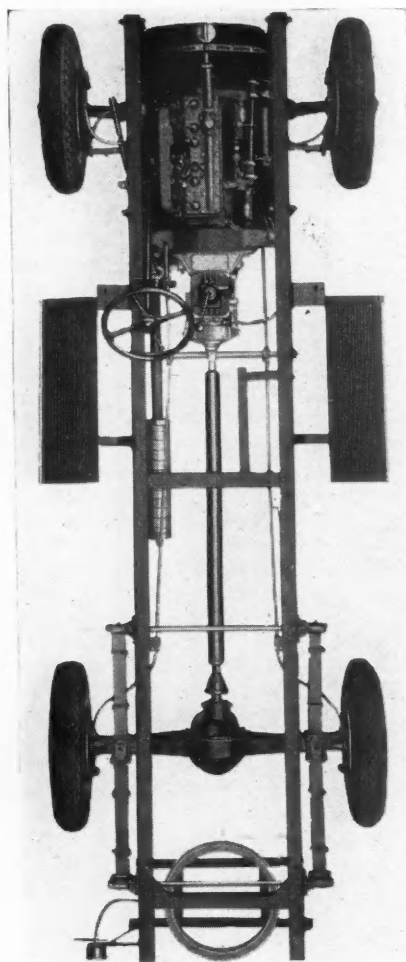
cu. in. Cylinders are cast in block with integral grey iron crankcase and pistons are of cast iron with three rings above the pin. Pins are screw-locked in piston. The 2¾ in. counter-balanced crankshaft revolves in four interchangeable main bearings having a total length of 6 15/16 in. The center to center length of the connecting rods which have spun babbitt bearings, are 8¾ in. Valves have 45 deg. seats with 1½ in. diameter heads for the intake and 1 15/16 in. for exhaust. Intake valves are of nickel chromium and exhaust, silichrome or high chromium. Starting, lighting and ignition with semi-automatic advance on distributor are furnished by Auto-Lite.

Willys-Knight, Model T-103, is powered by a 2 5/16 x 4¾ in. Knight engine having a displacement of 177.9 cu. in. and developing 53 hp. at 3000 r.p.m. The cylinders are integral with the crankcase and are cast in block. The pistons are invar strut aluminum and carry four rings above the pins, which are screw-locked in piston. Center to center length of the connecting rods, also with spun babbitt bearings, are 10 in. Seven metal back babbitt-lined interchangeable main bearings having a total length of 11 15/16 in. carry the 2¾ crankshaft. The eccentric shaft is driven by an automatic adjusting Link-Belt chain. Lubrication is pressure as in the other model, but the system includes a Skinner rectifier.

With the exception of the clutch practically all other units in both models are interchangeable. Model C-101 employs a Borg & Beck ring type plate clutch, and Model T-103 a Rockford segment type plate clutch.

Finger tip control is provided, enabling the driver to control starting, lights and horn from the center of the steering wheel. Standard equipment includes speedometer, USL battery, electric horn, head and tail lights, Alemite grease gun, air cleaner, gasoline filter, front and rear fenders, front bumper, spare tire and carrier.

# NEW STEWART 1-TONNERS LIST AT \$695 AND \$795



ABOVE: CHASSIS OF THE STEWART 1-TON SIX. SERVICE BRAKES ARE CABLE CONTROLLED. RIGHT: NEW STEWART EQUIPPED WITH CANOPY TOP EXPRESS

Four Stock Bodies Available on  
Either Four or Six-Cylinder Chassis

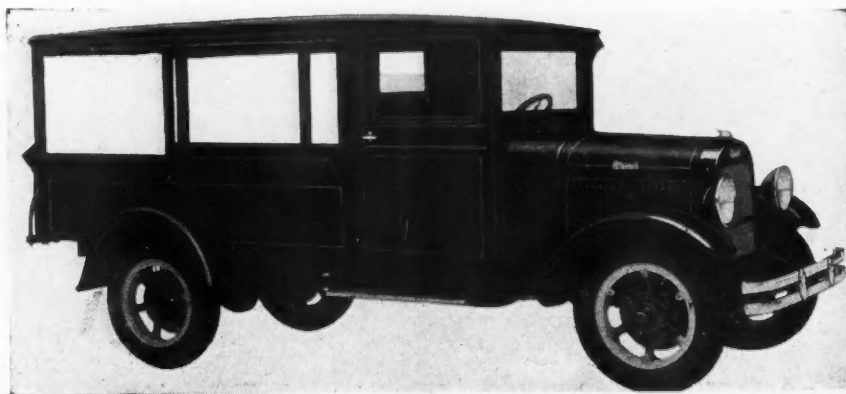
A NEW 1-ton chassis, listing at \$695 when equipped with a four-cylinder engine and \$795 when equipped with a six, is the latest offering of the Stewart Motor Corp., Buffalo. The former carries the lowest price listed in COMMERCIAL CAR JOURNAL AND OPERATION & MAINTENANCE specifications table. The four-cylinder chassis is designated Model 30 and the six, Model 30X. Both are equipped with unit-mounted plate clutches, four-speed transmissions, bevel rears and four-wheel Bendix brakes and are offered in a standard wheelbase of 130 in. and in specials of 120 and 140 in. Four types of stock bodies are built for these models, namely, metal panel, stake, express and canopy express.

A Spicer 3-in. tubular driveshaft equipped with metal Spicer joints is supplied on the 130-in. wheelbase size, while a three-joint shaft is furnished on the 140-in. wheelbase. Service brakes, which are cable controlled, are two-shoe Bendix. Braking effort is distributed, 65 per cent on the rear drums and 35 per cent on the front. The drums are 14 in. in diameter and 2 in. wide. An 8 by 2½-in. drum on the transmission with an external band serves for parking. The pressed steel frame is built up of side rails 6 in. deep at the center section with 2¼-in. flanges.

Equipment includes electric lights and horn, filter, air cleaner, rear tire carrier, spare rim, stop light, speedometer, etc.

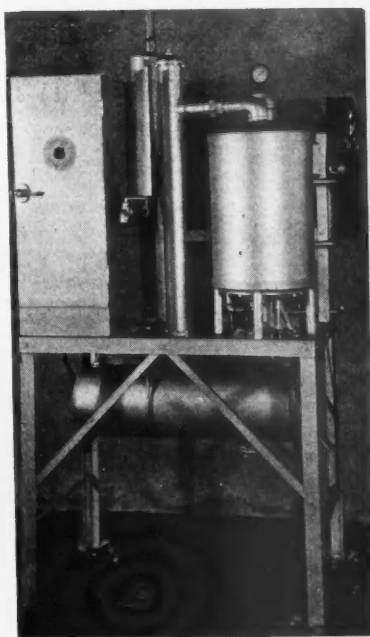
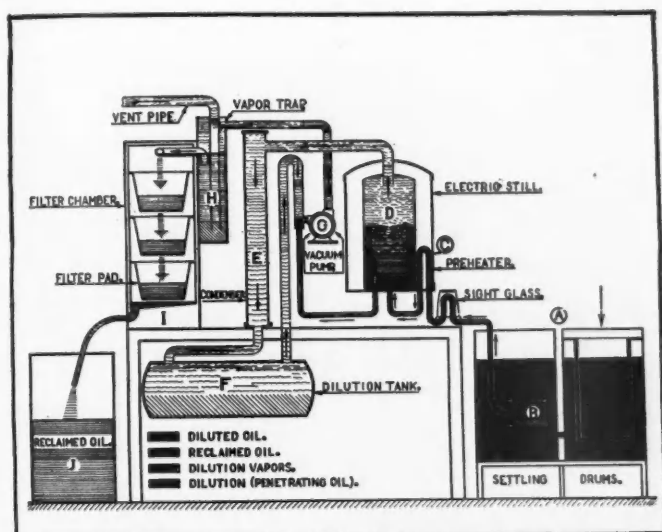
## Specifications of 1-Ton Stewart

Price, Model 30	\$695
Model 30X	\$795
Capacity	1-ton
Chassis weight	2905 lb.
Wheelbase, standard	130 in.
Extra	120, 140 in.
Tires, standard	6.50 x 20 B
Optional	30 x 5 P
Engine, Model 30, size	4-3¼ x 4½ in.
Displacement	199 cu. in.
Hp. at 2600 r.p.m.	50
Engine, Model 30X, size	6-2¾ x 4¼ in.
Displacement	185 cu. in.
Hp. at 2600 r.p.m.	55
Carburetor	Stromberg
Feed	Vacuum
Gasoline tank, capacity	15 gal.
Location	Under seat
Starting, lighting and ignition	Delco-Remy
Radiator, type	Cellular
Clutch, type	Plate
Transmission:	
Speeds and mounting	4-unit
Universals, make	Spicer
Rear axle, type	½ floating
Drive	Bevel
Ratio, standard	5.6 to 1
optional	6.62 to 1
Steering gear, make	Ross
Type	Cam and lever
Service brakes	4-wheel Bendix
Hand brake, location	Transmission
Type	External
Springs, front, size	38½ x 2¼-10
rear, size	50 x 2½-11
Frame, depth	6 in.
Wheels, type	Steel, spoke



# SKINNER'S JUNIOR RECLAIMER PATTERNS SENIOR MODEL

Refines  $2\frac{1}{4}$  Gallons of Oil Per Hour by Continuous High Vacuum Distilling Process



THE new Junior model oil reclaimer now being manufactured by Skinner Automotive Device Co., Detroit, is similar in design and operating principle to the Senior reclaimer. It is automatic in operation and has a capacity of  $2\frac{1}{4}$  gal. of refined oil per hour.

A continuous process of reclaiming is employed which includes settling, filtering, distillation under high vacuum and filtering. Electricity is used for heat in the still and for the vacuum pump, the draw being 2.2 kw. per hour. Equipment is furnished for use with either A.C. or D.C. current.

Arrangement of parts of the machine is shown in the photograph, and the operating principle is indicated in the cross-section sketch.

Oil to be reclaimed is first permitted to settle in two drums, A, to allow water and heavy solid matter to separate from the oil, thus saving the filters. A high vacuum is maintained in the still, which reduces the temperature required to distil of gasoline and other diluting liquids. This vacuum draws in a continuous supply of oil from the settling drums to the still. The oil passes through the filter, B, and thence through a preheater, C, where it is warmed before entering the still, D. Flow of oil is controlled by an automatic valve. In the still the oil passes upward along the electrically heated surfaces and diluting liquids are evaporated. The vapor is discharged into the condenser E, where it is condensed into a liquid which collects in the tank, F.

Passing through a baffle cup, the oil is drawn into vacuum pump, G, and discharged into the vapor separating tank, H. Any vapors in the oil are trapped in this tank by an oil seal and are piped outside the building.

Flowing from the vapor separating tank, oil enters the inclosed filter compartment and passes through a series of gravity filter pans which remove fine particles of dirt and abrasive. Leaving the filters, the oil flows into the storage drum, J.

Price of the Junior model reclaimer is \$650 at Detroit.

OPERATING PRINCIPLE OF THE SKINNER JUNIOR OIL RECLAIMER IS SHOWN BY SECTION DRAWING ABOVE. THE PROCESS IS AUTOMATIC AND CONTINUOUS. COMPACT ARRANGEMENT OF THE VARIOUS PARTS IS SHOWN BY PHOTOGRAPH AT THE LEFT. SETTLING DRUMS AND RECLAIMED OIL DRUMS ARE NOT SHOWN



# FLAT RATE PRICE LIST NO. 37

## REO TRUCKS

### Universals and Shafts

1. Universal joint, front of long shaft, overhaul
  - F-4, T-6 ..... \$4.75
  - Jr., DA, DC ..... 3.70
  - FA, FE, FF, FC, FD, G, GA, GC, GD.... 4.80
2. Remove driveshaft at rear universal joint, clean parts and reinstall
  - F-4 ..... 2.15
  - Jr., DA, DC ..... 1.60
  - FA, FE, FF, FC, FD. 2.50
  - G, GA, GC ..... 2.00
- (a) Replace universal joint, at rear of driveshaft, including lubrication
  - F-4 ..... 8.25
- (b) Same operation when necessary to remove pinion ..... 10.25
- (c) Replace fabric disk in rear universal joint
  - T-6 ..... 1.50
5. Tighten bolts on fabric disk universal
  - T-6 ..... .40
6. Driveshaft, remove and replace
  - F-4 ..... 2.00
  - T-6 ..... 2.50
  - Jr., DA, DC ..... 1.60
  - FA, FE, FF, FC, FD, G, GA, GC, GD.... 1.60
8. Remove short driveshaft with center bearing and universal joint assembly, disassemble, reassemble and reinstall, including lubrication
  - F-4 ..... 4.10
  - FA, FE, FF, FC, FD. 3.40
  - G, GA, GC ..... 3.75

### TRUCK FLAT RATE BOOK

A MANUAL of flat rate labor charges for pricing truck repair jobs is being compiled by the Book Department of the Chilton Class Journal Company. The new product will be known as the Rapid Commercial Car Flat Rate and Repair Data Book and its arrangement will be similar to the famous Rapid manual for passenger cars, of which over 100,000 have been sold to date. The COMMERCIAL CAR JOURNAL AND OPERATION & MAINTENANCE editors have long recognized the need for a universal type price book and the Flat Rate data printed in this publication during the past few years was the first step in a definite, progressive editorial program designed to improve conditions in the field of truck maintenance. The reception accorded these preliminary efforts has indicated the insistent demand for Flat Rate information in book form. Rapid Commercial Car Flat Rate and Repair Data Book which is designed to meet this demand will be ready for delivery on June first of this year. The new manual priced at \$3.00 will be available only to subscribers of COMMERCIAL CAR JOURNAL AND OPERATION & MAINTENANCE and AUTOMOBILE TRADE JOURNAL AND MOTOR AGE.

### NOTE

Reo prices are continued from last issue and additional prices will be given in an early issue.

### CORRECTION

Operation B-8 in Price List No. 36—"F and G Series, front \$6.25" should read "F and G series, single rear wheels, \$6.25" and the next line should read "F and G series, dual rear wheels, \$7.75." Under operation B-4x, the line "F and G series, front" should be stricken out and under "B-10 F and G series, front, \$7.00" should be stricken out.

### Torque Arm

1. Remove and replace torque arm
  - F-4 ..... \$3.50
  - T-6 ..... 2.50
  - G ..... 3.50
2. Replace torque arm
  - F-4 ..... 3.75
  - T-6 ..... 2.70
  - G ..... 3.75
3. Tighten torque arm
  - F-4 ..... 1.75
  - T-6 ..... 1.45
  - G ..... 1.60
4. Replace bracket at cross member at front of torque arm
  - F-4, T-6 ..... 3.00
  - G ..... 3.40
- (b) Replace bracket when arm is off
  - F-4, T-6, G ..... 1.25
5. Replace bracket, rear end
  - F-4 ..... 4.45
  - T-6 ..... 3.55
  - G ..... 4.45
6. Replace bushings at front end of torque arm
  - F-4, T-6, G ..... 1.75
- (b) Replace bushing when arm is off
  - F-4, T-6, G ..... .90
7. Replace bushing at front and rear of torque arm
  - F-4 ..... 7.20
  - T-6 ..... 6.00
  - G ..... 7.20
8. Replace bushing in shackle at front end of torque arm
  - F-4, T-6 ..... 4.60
  - G ..... 5.00
- (b) Same operation when torque arm is off
  - F-4, T-6, G ..... 1.75
9. Replace spring in torque arm
  - F-4, T-6, G ..... 1.25

The Commercial Car Journal and Operation & Maintenance



# SERVICE HINT

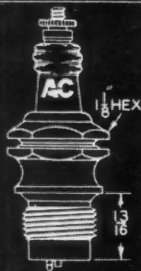

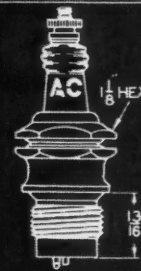

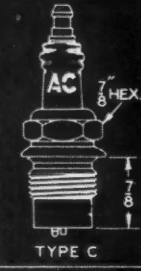

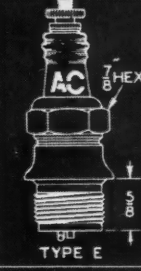
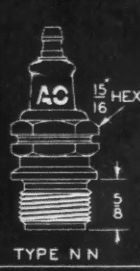
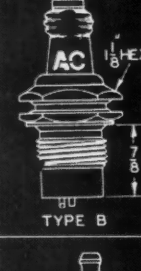

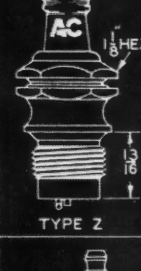
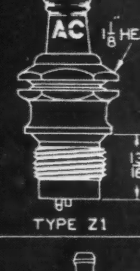
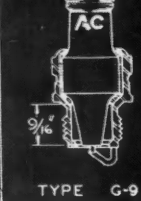
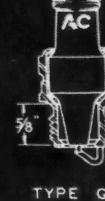
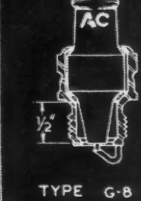
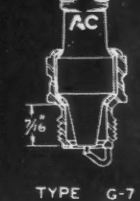
Factory Advice About Spark Plugs for GMT Trucks

**\$5** IDEAS FOR SERVICE HINTS FROM SHOP MEN ARE WELCOME. TELL ALL ABOUT THE IDEA IN SHOP TERMS AND SEND DRAWING OR PHOTOGRAPH. FIVE DOLLARS WILL BE PAID EACH SUCCESSFUL CONTRIBUTOR

**G**ENERAL MOTORS TRUCK CO., Pontiac, Mich., has issued recommendations for spark plugs for its K and T series trucks. Plugs furnished as standard equipment and those to be used in case of fouling or preignition are listed on the chart.

Plugs shown in the last column are to be used only when operating conditions are extremely severe and plug shown in adjoining column does not eliminate preignition.

Plug gap should be .020 to .025 in. for all of the plugs listed. Gap of ignition points should be .012 in. for type K and .020 in. for other types.

TRUCK MODEL	STANDARD EQUIPMENT	TO PREVENT FOULING	TO PREVENT PREIGNITION	FOR EXTREME PREIGNITION
K	 TYPE Z	 Z CARBON PROOF	 TYPE Z1	 TYPE A
T-20 T-40 T-50	 TYPE C	 C CARBON PROOF	 TYPE E	 TYPE NN
T-10 T-11 T-19	 TYPE B	 B CARBON PROOF	 TYPE Z	 TYPE Z1
T-30 T-42 T-60	 TYPE G-9	 TYPE G-10	 TYPE G-8	 TYPE G-7



# NEW TRUCK SALES

## Complete New Truck Registrations for October, 1929, Totals

	Atterbury	Autocar	Brockway-Indiana	Chevrolet	Diamond T	Dodge Bros.	Fargo	Federal	Ford	G. M. C.	Gottfredson	International	La France-Republic	Larabee	Mack	Moreland	Pierce-Arrow	Relay	Reo	Rugby	Schacht	Selden	Sterling	Stewart	Studebaker	White	Willys Overland	Total Sales by States Including Miscellaneous		
ALA.....Oct.			4	754	1	108	2	35	719	46		135	6		11		1	1	18	2						1	34	42	1,926	
†10 mo.			10	3,343	1	214	10	48	2,471	97		321	6		23		1	2	39	3					1	2	67	75	6,754	
ARIZ.....Oct.				65		24	1		110	6		7			1				3	1			1		1	1	3	4	230	
10 mo.				730		230	10		1,242	107		124			6	3			41	26			1	4	40	14	32		2,618	
ARK.....Oct.			1	502		38	3	1	586	15		62			1				13	1					1	2	10	22	1,258	
Nov.				252		7			302	1		23			1				7										608	
10 mo.			14	2,755	1	213	22	9	3,353	76		523			11			2	64	5					2	11	53	83	7,234	
CAL.....Oct.		13		650	2	183	20	20	1,504	86		56	5		34	50		1	104	25			24	8	12	47	11		2,953	
10 mo.		156	2	4,938	15	2,067	124	223	13,722	891	19	525	48		356	548	10	7	1,006	170			263	74	155	392	94		26,906	
COLO....Oct.				356		33	14	2	445	21		63	1		1	1		2	16	3						1	5	24	992	
10 mo.		2	4	2,064		378	66	23	2,456	241	1	469	4		12	3		4	81	23					1	11	45	80	5,988	
CONN...Oct.		9	16	208	9	80	10	3	239	36		34		4	49		1	1	44			2		1	11	1	24	15	818	
10 mo.		75	100	1,733	71	628	65	52	2,199	289		307	3	28	336		17	16	485	17	7	4	18	127	49	91	87		6,906	
DEL.....Oct.			1	32		2			46	5		7							1								1	1	96	
10 mo.		13	3	428	1	40	1	2	581	69		86	2		8		6		31	5			1	3	1	13	8		1,303	
D. C.....Oct.		2	1	54	6	12			138	20		8			4				4				3	1	1	2	3	261		
Nov.		14		19	2	5	1		95	9		4			1				3		1		1						170	
10 mo.		14	22	406	43	69		3	1,124	85		49			50		4	8	36	1			13	28	1	47	16		2,043	
FLA.....Oct.			3	149		15		1	206	3		21			1				7								2	1	410	
10 mo.			32	1,440	6	128	4	4	2,545	65		149	3		32		5		61							9	48	24	4,557	
GA.....Oct.		4	11	238		24	2	5	333	13		15			3				11							1	11	10	682	
10 mo.		14	78	2,520	1	221	14	18	2,779	66		178			35		1		44							8	85	62	6,129	
IDAHO...Oct.				103		14	3		84	8		21	4						5	6							2	2	255	
10 mo.				879	2	131	13	1	878	60		179	5		15	10	1	1	53	41						6	26	15	2,336	
ILL.....Oct.		7	3	512	52	100	14	9	727	27	1	124			10		1		72	2			4	2	1	18	39	16	1,871	
Nov.		3	4	276	20	59	11	5	533	34		68	1		6				31	2			1	3	4	12	16		1,162	
10 mo.		83	120	6,710	887	1,396	147	124	9,883	598	46	2,002	25		273		11	45	531	46			83	27	24	227	304		24,613	
IND.....Oct.			9	305	5	40	5	1	470	30		75						4	20	2	2			7	9	5	13	1,007		
10 mo.		17	195	4,273	69	706	38	50	5,794	437		760	1		17		5	41	336	12	7			85	90	67	199		13,270	
IOWA...Oct.			4	298	3	48	3	6	278	21		94	1		3				13	2							1	25	808	
10 mo.		1	43	4,314	20	466	68	28	3,211	137		1,264	4		44		1	13	256	28					1	17	31	190	10,192	
KAN.....Oct.			2	199	2	28	2		268	13		46	1		11			1	9						3	1	2	15	605	
10 mo.			25	4,660	25	595	74	6	4,542	304		1,157	12		27		3		170	11		1		17	35	39	287		12,045	
KY.....Oct.			4	190	4	25	3	2	224	6		40	1		8			2	11	1	4			1	4	1	6	539		
10 mo.		7	39	1,750	26	271	29	7	1,944	166		410	5		51		2	16	129	6	26			6	24	39	71		5,064	
LA.....Oct.				374		18			362	8		56			1				2									5	11	838
10 mo.		3	26	2,329	14	200	7	5	3,153	114		491			26			1	29	1						1	54	36	6,504	
ME.....Oct.		1		177	2	31	2		121	4		21			3				21	3			6			6	4	12	416	
10 mo.		11	7	1,768	17	286	30	2	1,784	67		163			34				212	18		1	10			24	9	77	4,540	
MD.....Oct.		7	10	154	2	33	4	10	274	19		23	2		14				13			1	7	2	7	13	7		611	
10 mo.	1	122	64	1,664	78	365	25	51	2,469	209		343	18		193		3	7	204	6		3	53	44	15	155	36		6,243	
MASS....Oct.		32	21	351	16	150	15	27	618	57		84	8	6	40				93	2		2	23	8	5	42	15		1,638	
10 mo.		260	194	3,132	145	1,228	179	156	6,257	715	1	709	88	44	416		17	4	532	18	5	18	173	84	47	275	128		15,292	
MICH...Oct.		1	2	611	8	72	14	23	1,127	58	2	74	3		2			1	62	3						2	9	21		2,115
10 mo.		54	34	6,666	62	926	156	232	11,677	761	37	982	29		113		15	14	752	30	2	2		2		83	81	230		23,235
MINN...Oct.				351	1	39	19	5	516	15		108			13			4	23	1							2	27	1,139	
10 mo.				3,201	19	372	58	60	4,627	198		894			59		1	9	231	11						24	76	172		10,100
MISS....Oct.			1	498		11	1		506	5		71							5								10	20		1,129
10 mo.			17	2,815		94	6		2,805	41		329			2				36	6						1	16	62		6,233
MO.....Oct.			5	401	15	52	6	9	507	28		50	2		16				11	3			2			3	2	19		1,147
10 mo.		37	100	4,798	220	791	59	115	5,862	494		901	20		151		34	6	246	27			25	15	43	116	220		14,446	
MONT...Oct.				100		10	2	2	145	6		32							1								1	1	4	304
10 mo.		3		1,114		232	35	25	1,900	94		527	5		17		3	2	99	19						8	37	65		4,199

† November not included in 10 mo. totals.

Figures in this table are compiled by R. L. Polk & Company, of Detroit, except Illinois, which compiled by the New Jersey Motor List Co., New Car Division, of Trenton. Readers desiring



# BY MAKES AND STATES



## for Ten Months, and Partial Reports for November, 1929

	Atterbury	Autocar	Brockway-Indiana	Chevrolet	Diamond T	Dodge Bros.	Fargo	Federal	Ford	G. M. C	Gottfredson	International	La France-Republic	Larabee	Mack	Moreland	Pierce-Arrow	Relay	Reo	Rugby	Schacht	Selden	Sterling	Stewart	Studebaker	White	Willys-Overland	Total Sales by States Including Miscellaneous	
NEB....Oct.	...	...	4	253	1	23	3	1	300	16	1	67	...	...	1	...	...	...	7	2	...	...	...	...	...	...	3	20	709
10 mo.	...	...	20	2,906	17	281	31	7	2,828	217	4	789	1	...	21	...	...	1	89	18	...	...	...	...	...	23	34	122	7,462
NEV....Oct.	...	...	...	11	...	3	...	...	24	2	...	...	...	...	...	1	...	...	1	...	...	...	1	...	...	...	...	...	4
10 mo.	...	1	...	171	...	121	8	1	408	25	...	25	1	...	5	15	...	...	8	2	...	...	2	...	4	8	2	833	
N. H....Oct.	...	1	6	62	...	9	1	1	94	9	...	12	...	...	2	...	...	...	9	...	...	...	...	2	1	1	8	220	
Nov.	...	...	...	37	...	6	...	...	86	5	...	8	1	...	2	...	...	...	5	...	1	...	...	1	...	...	...	157	
10 mo.	...	7	36	734	5	142	14	14	1,025	67	...	64	...	...	22	...	1	...	86	4	...	...	3	16	7	7	29	2,296	
N. J....Oct.	...	12	19	501	8	144	13	16	723	63	7	33	2	...	50	...	1	3	59	1	3	1	16	6	7	37	21	1,779	
10 mo.	...	207	230	4,372	90	1,002	147	149	6,428	544	20	414	50	11	571	...	65	23	543	35	19	18	103	64	100	319	188	16,288	
N. M....Oct.	...	...	...	130	...	9	3	...	64	1	...	4	...	...	...	...	...	...	1	4	...	...	...	...	...	...	...	6	223
10 mo.	...	...	4	829	...	105	22	3	639	42	...	112	...	...	...	...	...	...	20	8	...	...	...	...	2	21	42	1,853	
N. Y....Oct.	11	85	175	1,107	91	327	68	23	1,998	159	...	231	25	27	196	...	5	13	160	9	3	18	17	77	23	117	53	5,098	
10 mo.	109	601	1,584	10,297	668	2,855	531	250	16,170	1,331	2	1,952	197	199	1,561	...	183	101	1,359	77	26	156	173	699	144	812	438	43,254	
N. C....Oct.	...	4	5	445	1	66	5	...	413	8	...	18	4	...	5	...	...	...	8	1	...	...	...	3	...	3	6	1,006	
10 mo.	...	19	19	3,659	1	474	28	12	3,675	174	...	222	14	...	69	...	...	...	59	16	...	...	...	12	11	47	55	8,677	
N. D....Oct.	...	...	...	146	1	8	3	1	130	6	...	68	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	16	381
10 mo.	...	...	...	1,290	9	123	21	6	1,393	102	...	868	...	...	...	...	2	2	41	15	...	...	...	...	5	5	66	3,963	
OHIO....Oct.	...	11	8	715	7	130	11	12	1,098	69	...	163	2	...	15	1	...	7	56	1	21	...	1	13	4	71	76	2,525	
10 mo.	...	169	222	6,843	103	1,189	148	132	9,768	664	8	1,375	22	1	235	1	31	41	634	37	126	11	23	68	57	528	580	23,379	
OKLA....Oct.	...	3	8	613	2	93	12	10	485	27	...	96	1	...	10	...	...	...	25	...	...	4	...	...	1	6	17	1,424	
10 mo.	...	12	64	4,352	31	653	79	81	4,625	216	...	952	5	...	62	...	1	2	173	5	...	...	...	12	34	71	176	11,682	
ORE....Oct.	...	...	...	151	...	25	2	10	246	16	...	16	1	...	2	2	...	...	5	7	...	...	10	...	5	4	2	557	
10 mo.	...	1	...	1,485	1	287	30	68	2,453	190	...	238	10	...	66	31	...	...	142	45	...	...	29	...	20	93	28	5,340	
PA....Oct.	...	87	60	875	28	235	43	14	1,412	87	7	191	5	6	82	...	...	13	75	6	...	...	31	31	11	61	47	3,474	
10 mo.	19	520	417	7,729	236	2,191	315	168	12,792	880	38	1,492	70	38	772	...	32	134	1,030	71	1	12	275	352	108	561	449	31,227	
R. I....Oct.	...	4	2	60	3	22	4	5	127	22	...	7	...	...	10	...	1	...	26	2	1	...	...	...	...	...	...	310	
Nov.	...	12	2	40	1	18	2	8	97	9	...	12	...	...	...	...	...	...	13	3	...	...	1	6	...	...	...	242	
10 mo.	...	49	13	645	9	270	32	41	837	173	...	66	4	...	81	...	5	...	217	15	10	2	19	35	9	33	13	2,597	
S. C....Oct.	...	...	...	224	...	14	1	1	177	4	...	16	1	...	1	...	...	...	1	1	...	...	...	...	...	...	3	1	445
10 mo.	...	...	18	1,934	...	148	24	35	1,849	77	...	140	5	...	15	...	...	...	15	5	...	...	...	4	3	21	17	4,320	
S. D....Oct.	...	...	...	119	1	13	1	2	109	1	...	63	...	...	...	...	...	...	8	1	...	...	...	...	1	...	8	327	
10 mo.	...	...	2	1,358	10	140	18	4	1,233	67	1	796	...	...	10	...	...	...	108	15	...	...	...	2	10	5	72	3,860	
TENN....Oct.	...	...	...	281	3	36	1	6	262	20	...	45	3	...	6	...	...	...	11	...	...	...	...	3	3	6	6	693	
10 mo.	...	...	27	2,882	16	235	9	56	1,935	194	...	262	10	...	62	...	...	6	79	1	...	...	...	3	21	56	36	5,412	
TEXAS....Oct.	...	2	3	1,403	...	101	16	3	1,276	50	...	217	1	...	7	...	...	4	37	6	...	...	...	2	3	19	47	3,202	
10 mo.	...	60	101	12,343	43	1,010	114	46	11,826	552	...	2,458	6	...	91	...	5	34	439	45	...	...	...	15	48	183	349	29,856	
UTAH....Oct.	...	...	...	77	...	10	1	...	150	4	...	13	...	...	3	...	...	...	5	5	...	...	...	...	1	1	2	273	
10 mo.	...	...	...	643	...	139	10	2	1,286	36	...	105	...	...	27	4	...	...	50	30	...	...	...	...	11	22	17	2,389	
VT....Oct.	...	...	...	36	2	14	...	1	50	...	...	10	...	1	...	...	...	...	7	1	...	...	...	2	...	2	3	131	
10 mo.	...	...	17	474	5	147	22	28	722	56	...	207	...	10	36	...	1	2	84	5	...	...	...	15	8	18	25	1,899	
VA....Oct.	...	2	4	177	...	37	2	2	180	14	...	35	2	1	3	...	...	...	1	13	...	...	...	...	4	1	8	7	505
10 mo.	...	30	59	3,045	9	320	6	42	3,308	152	...	372	38	4	43	...	3	8	139	13	...	...	...	34	17	77	62	7,812	
WASH....Oct.	...	...	...	162	...	31	6	2	297	24	...	22	...	...	4	1	...	...	14	8	...	...	...	...	2	11	13	616	
Nov.	...	...	...	57	...	8	2	...	153	5	...	7	...	...	4	1	...	...	4	2	...	...	...	...	1	4	1	254	
10 mo.	...	...	...	1,886	...	411	46	27	3,613	238	...	362	11	...	46	27	3	6	208	65	...	...	5	...	25	152	83	7,480	
W. VA....Oct.	...	...	2	183	1	28	3	1	155	7	...	34	1	...	...	...	...	...	11	2	...	...	...	7	...	2	11	448	
Nov.	...	...	5	80	2	29	2	...	135	9	...	12	1	...	1	...	...	...	4	4	...	...	...	7	...	4	289		
10 mo.	...	1	46	1,637	26	308	21	24	1,851	140	...	355	9	...	4	...	...	14	131	9	1	...	...	20	11	23	52	4,712	
WIS....Oct.	...	...	...	425	18	64	9	8	630	32	...	102	...	...	...	...	...	...	5	18	1	...	...	...	...	...	...	1,388	
Nov.	...	...	...	157	6	19	2	2	276	6	...	27	...	...	...	...	...	...	7	7	...	...	...	...	...	...	...	16	549
10 mo.	...	4	5	4,058	195	548	67	84	6,101	302	...	895	5	...	34	1	9	71	284	19	...	...	108	64	39	70	194	13,369	
WYO....Oct.	...	...	...	27	...	10	...	...	25	2	...	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	71	
10 mo.	...	...	...	337	...	136	7	1	574	19	...	102	...	...	4	1	...	...	26	5	...	...	...	...	6	12	6	1,240	
Total....Oct.	11	288	394	15,815	295	2,642	353	280	20,978	1,199	18	2,797	82	45	623	56	9	63	1,140	116	36	26	155	206	124	627	764	49,885	
Sales by Makes.	129	2,558	4,013	145,839	3,199	25,482	2,990	2,525	196,597	12,837	177	28,465	736	335	6,144	644	484	640	11,668	1,090	230	255	1,383	1,936	1,452	5,281	5,754	469,930	
Total....10 mo.	129	2,558	4,013	145,839	3,199	25,482	2,990	2,525	196,597	12,837	177	28,465	736	335	6,144	644	484	640	11,668	1,090	230	255	1,383	1,936	1,452	5,281	5,754	469,930	
Sales by Makes.	129	2,558	4,013	145,839	3,199	25,482	2,990	2,525	196,597	12,837	177	28,465	736	335	6,144	644	484	640	11,668	1,090	230	255	1,383	1,936	1,452	5,281	5,754	469,930	

is compiled by the Robinson's Advertising Service, of Springfield; and New Jersey, which is town and county lists of owners in any section may address any of these three companies.

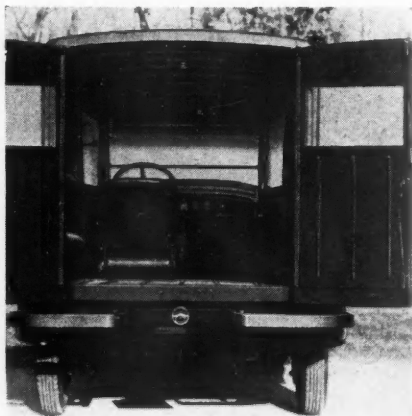
# GRAHAM'S ENTER DELIVERY FIELD WITH \$1,095 JOBS

## Specifications of Paige Commercial Car

Price with body .....	\$1,095
Price, chassis .....	\$860
Chassis weight .....	2465 lb.
Capacity .....	1500 lb.
Wheelbase .....	115 in.
Tires, all around .....	5.50/19 B.
Engine .....	Own
Size .....	6-3 1/4 x 4 1/2 in.
Hp. at 3200 r.p.m. ....	76
Valve arrangement .....	L-head
No. main bearings .....	7
Compression ratio .....	5.51 to 1
Radiator, make .....	Long
Ignition .....	Delco-Remy
Starter, generator .....	Delco-Remy
Carburetor .....	Detroit Lubricator
Fuel feed .....	AC pump
Clutch .....	Long
Type .....	Plate
Transmission, make .....	Warner Gear
Mounted and speeds .....	Unit 3
Universals, make .....	Universal Products
Type .....	Metal
Rear axle, make .....	Salisbury
Type .....	1/2 floating
Ratio .....	4.9 to 1
Torque and drive .....	Springs
Steering gear .....	Ross
Type .....	Cam and lever
Service brakes .....	4-wheel hyd. int.
Hand brake .....	transmission, ext.

## Body Dimensions

Width at floor .....	44 1/2 in.
Width at belt .....	49 1/2 in.
Length back of seat .....	71 in.
Maximum height .....	49 1/4 in.
Rear door height .....	46 1/4 in.
Rear door width .....	49 1/4 in.
Loading height, loaded .....	26 in.
Loading height, unloaded .....	29 1/2 in.
Rear door to dash .....	116 1/4 in.



ABOVE: SHOWING METAL LINED INTERIOR OF PAIGE. REAR AND DOORS ARE PROTECTED BY A SPECIAL BUMPER MOUNTED ON FRAME. RIGHT: PANEL DELIVERY MODEL

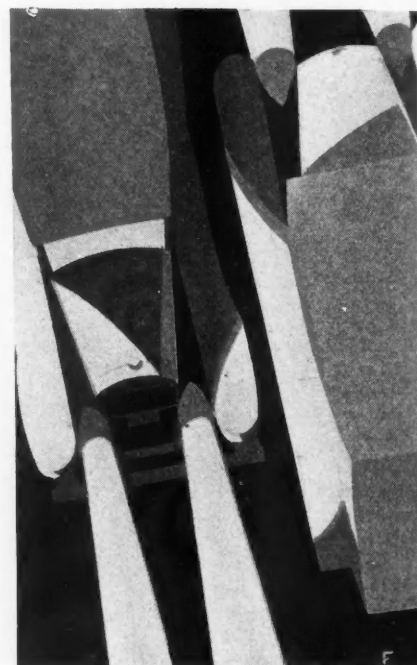
## Panel and Screen Models Powered by Graham Six

INCLUDED in the 1930 line of the Graham-Paige Motors Corp. are two commercial cars, a panel delivery and a screen delivery, both priced at \$1,095. Their load capacity is 1500 lb. These delivery units, called Paige commercial cars, are mounted on the Graham special six, or former 615 chassis, with minor modifications to adapt it to commercial use.

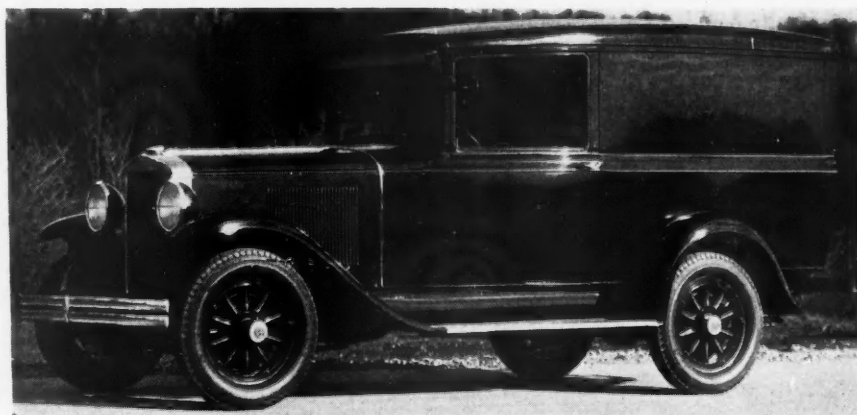
In the future Graham-Paige passenger cars will be designated by the name Graham, the name Paige being reserved for the commercial cars.

Engines in the new chassis are identical with the special six except for the omission of the Lanchester damper and with their 3 1/4-in. bore and 4 1/2-in. stroke develop 76 hp. at 3200 r.p.m. Transmissions, which are unit mounted, provide three speeds instead of four as on the passenger car. The rear axle is a semi-floating 4.9 to 1 Salisbury, giving an overall reduction in low of 17.36 to 1. Springs have a slightly higher rate, have thicker leaves and contain nine leaves. Wheels are 19 in. in diameter and are equipped with 5.50-in. six-ply balloon tires. The chassis weight is 2465 lb.

Hoods, radiators and cowl are distinctly of passenger car type and all plating is chromium. The bodies, which are built by Graham-Paige, incorporate several interesting details in design. Rear wheel housings instead of encasing the wheels only, are full length, so that packages can be



slid from the front. Interior of panel body is lined with sheet steel to belt line, with wood above. Insides of rear doors are also covered with sheet steel. Attention to sealing is noted in the metal floor board jointing strips, of I-section, the lower flanges of which are recessed into grooves in the floor board edges. For the same purpose the lower edges of the rear doors are provided with metal strips which fit into metal grooves below the rear body cross-sill when the doors are closed. Other features of the bodies include a dome light, a steel shelf over the windshield, metallic sun visor, two-piece windshield, automatic windshield wiper, rear view mirror externally mounted. The instrument panel includes a heat indicator in addition to the usual instruments.

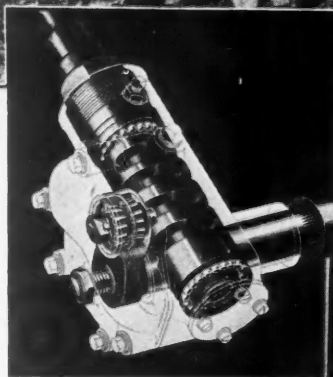


# Why So Many Trucks Have Ross Steering



**Ross** gives greater ease, certainty and safety in steering. This is attested

by the fact that Ross has been adopted as standard equipment by the majority of truck and bus manufacturers. The cam-and-lever principle—exclusive to Ross—enables drivers to handle their trucks without excessive strain or fatigue, under



*Hard going like that shown above demands easy, steady steering. The Diamond T truck, Ross-equipped, has it.*

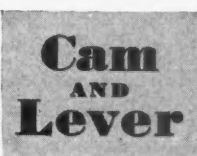
✧ ✧ ✧

all driving conditions.

» » The new "Ross Roller-Mounted" Cam and Lever Steering Gear recently announced brings even greater improvement in steering. *It actually makes steering 50 per cent easier . . . Write for complete information.*

**ROSS GEAR AND TOOL COMPANY, Lafayette, Indiana**

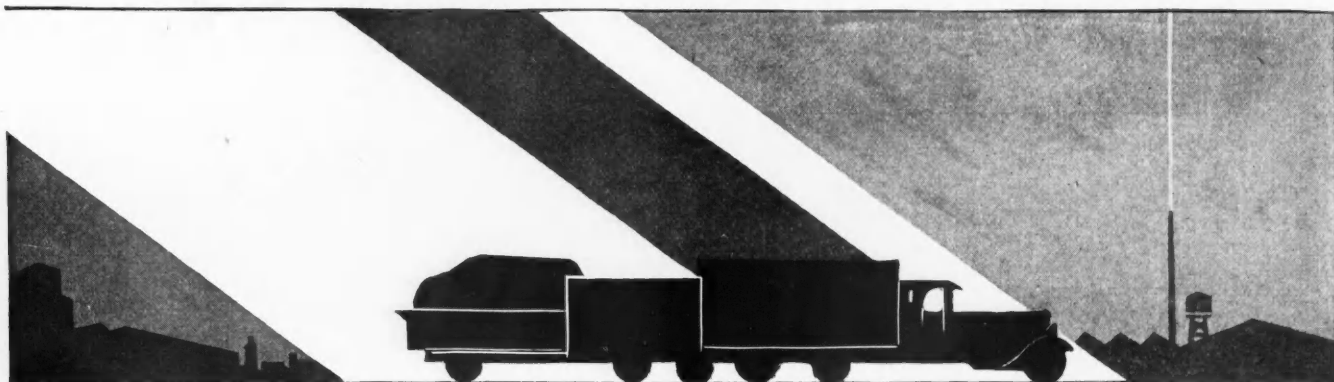
# ROSS



# STEERING



# TRUCK INDUSTRY



N = E = W = S

## Pierce-Arrow to Expand Its Truck Business

A rumor that has been turning up frequently during the last six months was interred once and for all when Pierce-Arrow distributors were informed by A. R. Erskine, chairman of the board of directors of the Pierce-Arrow Motor Car Co., that Pierce-Arrow would continue in the truck field and aim to attain a position more commanding than ever in the past.

In his remarks to distributors Mr. Erskine declared that a separate truck unit of the Pierce-Arrow and Studebaker companies would be formed, and that the separate company would engage in the manufacture and distribution of Pierce-Arrow trucks.

"A new and complete line of Pierce-Arrow motor trucks will be placed on the market shortly," Mr. Erskine said. "Our new line will embody the most advanced features of motor truck engineering."

It was understood that the headquarters of the new truck company would be in Detroit, where one of the Studebaker plants is available.

While there was no express statement to this effect, a likelihood exists that Studebaker commercial cars will be included in the new truck unit. If such an arrangement is made, the Studebaker trucks undoubtedly will retain their identity, and a conflict of models or carrying capacities will be avoided.

### McQueen Joins General Tire

L. A. McQueen has been appointed manager of trade sales for the General Tire & Rubber Co. Mr. McQueen has been successively assistant adver-

tising manager, advertising manager and general manager of tire sales for the B. F. Goodrich Co.

### Crawford With Thompson

Vincent E. Crawford, who has resigned as general manager of the Toledo Steel Products Co., has been appointed vice-president and general manager of the Thompson Products Co.'s plant at St. Catherine's, Ontario.

### G.M.T. Promotes Howard and DeHart

John M. Howard has been appointed assistant sales manager of the General Motors Truck Co., in active charge of sales extension. Before his appointment to his new post Mr. Howard served as advertising manager of the organization. Coincident with this announcement is the appointment of Henry T. DeHart to the position of manager of advertising and sales promotion. Prior to March, 1929, when Mr. DeHart joined the organization, he was for eight years advertising and sales promotion manager of the Reo Motor Car Co. for both the passenger car and truck divisions.

## Coming Events

### SHOWS

New York—National Automobile Show, Jan. 4-11  
Atlantic City—American Road Builders Assn., Jan. 13-18  
Atlantic City—Equipment for Motor Trucks, Inc., Jan. 13-18  
Cleveland—Automobile & Truck Show, Jan. 25-Feb. 1  
Chicago—National Automobile Show, Jan. 25-Feb. 1

### CONVENTIONS

Atlantic City—American Road Builders Assn., Jan. 13-18  
Chicago—National Automobile Dealers Assn., Jan. 27-28  
Cleveland—Ohio Assn. of Commercial Haulers, Jan. 30-31

## Ford Model A Improved In External Design

While no announcements have been made concerning the Ford truck, the 1930 Model A shows improvements in external design but no change mechanically. Prices remain unchanged. Improvements are noted mostly in the front of the Model A. An innovation is the use of rustless steel for the radiator shell, lamps, hub caps, metal strips, etc. The radiator is higher, deeper and narrower than formerly and the core is made up of flat tubes instead of round, arranged three in line, at an angle to the frame. Hood and cowl are almost on a straight line. Hood louvers are centralized in a panel and the number has been increased from 19 to 22. Front fenders are wider, have a longer sweep, and mud pans are flared to fit over the top of the frame side rails. Radiator and filler caps are flatter than formerly. Wheels are smaller and fitted with 19/4.75 tires.

### Reo Transportation Show

In celebration of the 15th anniversary of the Speed Wagon, the Reo Motor Car Co. is staging a special Progress in Transportation exhibit during the New York and Chicago national shows. The exhibit includes a display of Reo's full commercial line and a large assortment of special equipment such as sport delivery bodies, ambulances, six-wheel attachments, trailers, road scrapers, hoists, special bodies, etc.

### LaFrance-Rep. Factory Branch

The LaFrance-Republic Sales Corp. has opened a direct factory branch in Newark, N. J., at the corner of Frelinghuysen Ave. and Hunter St. Roscoe S. Allen will continue as manager.

# ...losing too much time on Brake Adjustments?

## 10 points of FERODO Superiority

1. High Average Wear-Life
2. Constant Gripping Power (coefficient of friction) to over 550° F.
3. Safe Brakes in Wet Weather
4. Will Not Burn Out
5. Fewer Adjustments
6. No Swelling or Shrinkage
7. Size Accuracy—within tolerance of .005 inch
8. No Glazing
9. Silent, Smooth Operation
10. Cheaper Per Mile of Service

*These are not claims but facts—proved in laboratories known to be the best equipped for practical tests on brakes*

YOU CAN'T earn money with trucks in the shop. You've got to have them on the road, keeping fast, regular schedules.

Ferodo Brake Linings are a big help. They wear very slowly, they do not glaze, or shrink or swell—so they hold their adjustment longer. And when you do reline, you will find Ferodo so accurate to size—within .005 inch—that you get a quick, correct fit even on close-tolerance modern brakes.

Furthermore, Ferodo Linings are safer. Water or grease cannot get into them, heat that scorches paint from the drums does not burn them.

All this means less expense for maintenance, faster time on the road. That is why Ferodo Brake Linings, even though they cost more at first, are the most economical in the end.

## FERODO AND ASBESTOS INCORPORATED

*Manufacturers of*

Ferodo Bonded Asbestos Brake Lining in rolls  
Ferodo Pat. Die-Pressed Brake Segments

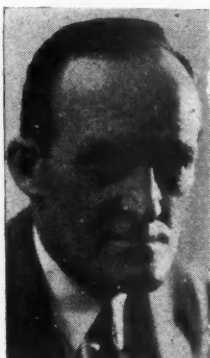
*Factory and General Offices: New Brunswick, New Jersey*



E-1-39

## Larrabee-Deyo Adds Two New Sixes

A three-tonner designated as Model 51 and a five-ton chassis, termed Model 80, have been added to the 1930 line of Larrabee-Deyo trucks. Model 51 has a 171-in. wheelbase, is powered by a six-cylinder 4 x 4½-in. Continental 18R engine and equipped with 34 x 7-in. pneumatic tires all around, while the heavier model having a standard 196-in. wheelbase is powered by a 4¾ x 4¾-in. Continental 21R engine and is equipped with 36 x 8 in. pneumatic tires. Major units of both models include Perfex radiator, Zenith carburetor, Auto-Lite ignition, generator and starter, Brown-Lipe multi-disk clutch, four-speed Brown-Lipe transmission, full-floating worm drive Timken axle and Ross steering gear.



J. D. Lannon

American Radiator and Standard Sanitary Corp.

### Bosch Name Litigation Ended

The long standing controversy between the American Bosch Magneto Corp. and the Robert Bosch Magneto Company, Inc., has been settled. The American Bosch concern will have the sole right to the use of the trade mark "Bosch" in the United States, Canada, Mexico, Cuba and American dependencies. The Robert Bosch interests may use the word "Robert Bosch" in this territory.

### Clore Succeeds Lawrence

Ralph H. Clore is the new general sales manager of the United States Electrical Tool Co., succeeding George M. Lawrence, who resigned to become vice-president of the General Radial Drill Company.

### Portable Service School

Studebaker dealers and mechanics are being given a course in automobile construction and repair work in their own service stations by a trained factory crew touring the country in two service-school buses recently put into operation by the Studebaker Corp. The buses are

equipped with a complete set of tools and parts necessary to demonstration.

### Kelsey Asbestos President

H. W. Kelsey, Russell Mfg. Co., was elected president of the Asbestos Brake Lining Association. Wm. Brookes, Ferodo Asbestos Co. and M. S. Judd, Raybestos-Manhattan Corp., were named first and second vice-presidents. W. J. Parker is commissioner with headquarters at 11 East Forty-fourth St.

### Krohn Federal Sales Manager

Henry Krohn, who for 18 years was sales manager of the old Paige-Detroit Company, has been appointed sales manager of the Federal Motor Truck Co. Mr. Krohn is widely known in passenger car circles. This is his first post in the truck industry.

### Martin Truck to Build

The Martin Motor Truck Company has secured ten acres of property at Waverly, N. Y., upon which site the company plans to complete its first manufacturing unit by May 1. This unit will comprise about 15,000 sq. ft.

### Budd Adopts Goodyear Rims

Goodyear's type "K" rim for mounting large pneumatic truck tires has been adopted as standard equipment on Budd wheels, according to an announcement issued by the Goodyear Tire & Rubber Co.

### Christie Changes to Trucktor

Christie Crawlers, Inc., 156 Wilson Ave., Newark, N. J., has adopted the new name of Trucktor to better describe its products. The new name is the Trucktor Corp. There is no change in personnel, management or address.

### Van Horn Joins Autocar

J. M. Van Horn has been appointed manager of the Autocar factory branch in Cleveland, Ohio, according to H. M. Coale, vice-president in charge of sales of the Autocar Co.

### Slade Appoints Copeland

Harry J. Copeland, formerly director of purchases for the Federal Motor Truck Co., has been appointed sales manager of Slade Asbestos Corp.

## Financial News

Company	Announces
Amer. Car & Fdy. Co.	reg. div. \$1.50 on com. and \$1.75 on pref.
Autocar Co.	quar. div. at rate of 8 per year on pref.
Eaton Axle Co.	reg. div. 75 cts.
Federal Motor Truck Co.	reg. div. 20 cts.
Goodyear Tire & Rubber Co.	reg. div. \$1.25.
Perfect Circle Co.	net income 10 mos. \$5.16 per share aft. chgs.
Timken Detroit Axle Co.	reg. div. 15c and extra div. 5c.
Hercules Motor Corp.	reg. div. 45c.
Sterling Truck Co.	net earn. double those for 1928.
Thompson Products, Inc.	ex. quar. div. 30c.
Black & Decker Mfg. Co.	reg. div. 40c com., 50c pref.
Detroit Steel Products	ex. reg. div. 40c, reg. div. 25c.
Firestone Tire & Rubber	initial div. 40c, new com. Jan. 20.
McCord Rad. & Mfg. Co.	reg. div. cl. A 75c Jan. 2.
McQuay-Norris Mfg. Co.	reg. div. 50c, stock div. 1 per cent.
Seiberling Rubber Co.	reg. quar. prf. div. \$2 Jan. 2.
Kelsey-Hayes Steel Corp.	reg. quar. div. \$1.75 on pref. Jan. 1.

## Standard Puts Out New Super-Six

A new 3½-ton, 156½-in. wheelbase, Fisher Super-Six with the option of an 18R Continental engine with a bevel axle or a 20R with a worm axle has been added to the line of the Standard Motor Truck Company. The bevel drive model is powered by a 4 x 4½-in. Continental 18R, while the worm driven job is equipped with a 4¾ x 4¾-in. Continental 20R. Major units include Zenith carburetor, Auto-Lite ignition, generator and starter, Brown-Lipe multiple disk clutch, amidships mounted seven-speed Brown-Lipe transmission, Blood Bros. universals, Ross gear and 4-wheel brakes.

### Largest Truck Tire

The Goodyear Tire & Rubber Co. recently constructed a 13.50-20 truck and bus balloon tire, the largest ever made for commercial use. It was the first of a set of 10 to be used by the Texas Electric Service Co., Dallas, on an AP Mack six-wheel truck and a four-wheel Highway Trailer. Its capacity is 8800 lb., which is greater than the load capacity of a 10-in. solid tire. Recommended pressure is 95 lb.

### Mitchell and Briggs Advanced

The appointment of W. Ledyard Mitchell as chairman of the board of the Chrysler Export Corp., and D. S. Briggs as vice-president of the Export Company has been announced at the general offices of Chrysler Motors and of the Chrysler Export Corp., respectively.



W. L. Mitchell

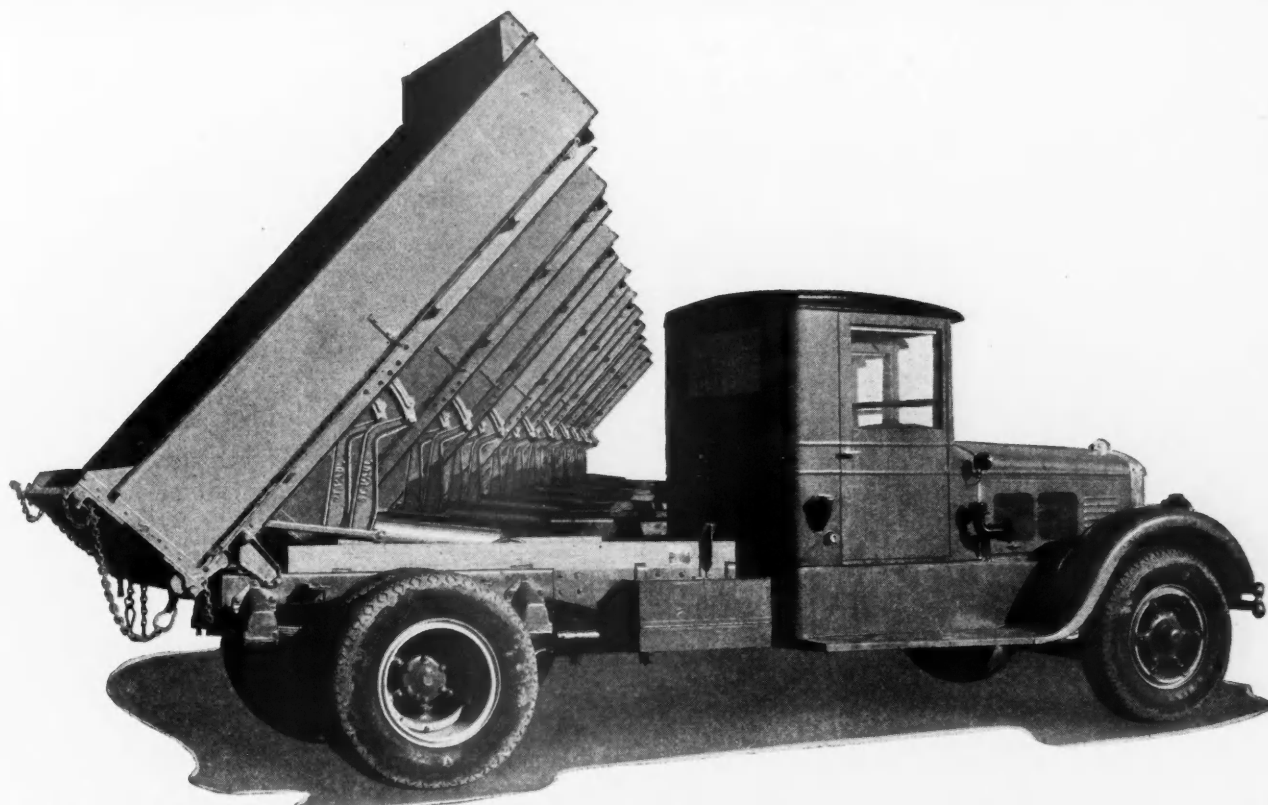
### Brearley Elected President

W. H. Brearley, Autocar Company, was elected president of the Pennsylvania Motor Truck Association at the December meeting of that body. The following were elected as associates: J. G. Whinney, Whinney's Express, vice-president of first division; George M. Bowles, Wood Hydraulic Hoist & Body Co., vice-president of second division; Wm. W. Heindel, Phillip's Special, secretary, and W. Ross Walton, Walton Tire Service Corp., treasurer.

### Yellow Buys Into Wills

Thirty per cent of the interest in C. H. Wills Motor Corp. has been bought by the Yellow Coach & Truck Co. The corporation, which a few years ago, succeeded Wilcox Trux, Inc., assembled trucks and buses. Trucks range from 1½ to 5-ton.

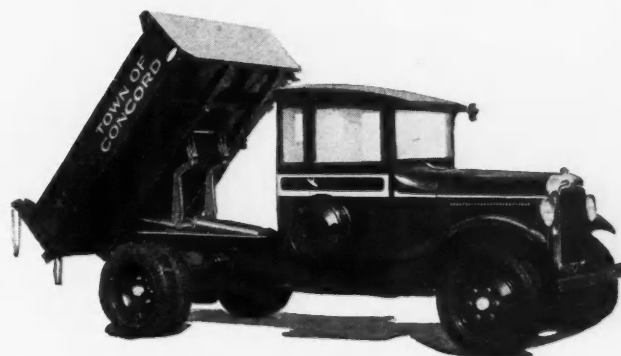




A fleet of nine Mack Trucks, Model BJ, with Type 14 bodies and equipped with Model 6UB St. Paul Underbody Hydraulic Hoists by the National Steel Products Co. of Kansas City, Missouri.

## "Guts"!

It's not a parlor word — neither is a dump truck a "social chariot." Out on the job where men sweat, not perspire, where there is hard work to do, where minutes count, where break-downs and tie-ups must not happen,—there you find St. Paul Hoist equipped dump trucks smoothly answering every call of the control levers, taking what's handed 'em, speeding up work, and giving an unfailing exhibition of what "he men" call "guts." And that's what St. Paul Hoists have nothin' else but!



Graham Bros. Truck equipped with Model 5UB St. Paul Underbody Hydraulic Hoist by the Truck Equipment Co. of Buffalo, N. Y.

*If you have a new truck or an old truck, a heavy truck or a light truck—there is a St. Paul Hoist for it.*

*"Ask the Dump Truck Driver on the Job"*

# —St. Paul—

**VERTICAL AND UNDERBODY  
HYDRAULIC HOISTS**

**Hydraulic Hoist Manufacturing Co.**

Factories at St. Paul, Minnesota

A St. Paul Hoist Distributor and Service Station is near you. Write for name and address.

# SOCIAL INFLUENCE

(Continued from page 27)

week than the local theatergoer can afford to see to the day and night service by high-speed trucks which maintain steady circulation of the latest films over large areas. Some of these trucks have runs of 375 miles from dusk to dawn, every night in the week, to keep the suburban resident satisfied that he is fully as well serviced with necessities as his friend who still sweats in the city.

One could go on endlessly citing the duties performed by the commercial car for the ever-widening areas of population—its part in the development of chain store operation alone being a big story. Many an industry brings wealth to small communities because the motor truck puts every business on the main line for incoming raw material and outgoing product.

The bus, incidentally, is solving some of the difficulties arising from city traffic congestion, which to a large degree is nullifying the advantages of the personal car as a means of transportation for the commuter. Lack of economical parking facilities is causing many who moved out of the city because they had their own transportation to give it up in disgust.

The bus steps in to augment standard facilities. In some instances lines operating directly into the city are filling the need. Others serve as feeder lines to fast rail service. There are many bus lines which have entirely replaced former interurban rail services, providing a more flexible medium from the standpoint of the operator because he can readily extend or alter his routes with the changing of population concentration.

Everywhere there are communities, large or small, located near or far from metropolitan areas that depend partly or entirely on the services made available by the motor truck. Examples are numerous and can be picked at random anywhere in the country.

Brigantine, N. J., which adjoins Atlantic City on the north, is an excellent example of a city without a railroad. Its only rail connection washed out in 1903 by a storm, this island city, seven miles long, practically ceased to exist for 20 years. But in 1923 a group of Atlantic City business men, perceiving possibilities in the island, formed a corporation and started to develop the resort. Transportation was their big problem. They decided to construct a wide road and bridge to connect the lower end of Brigantine with Atlantic City.

The business men who promoted the proposition were convinced of the practicability of vehicular transportation, and later results proved the soundness of their judgment. The

assessed valuation of the city has grown from \$193,000 in 1923 to \$14,308,000 in 1929. Today, building materials, food and merchandise of all kinds, and the residents themselves, all reach the resort by motor. The automobile, truck and bus have made possible the reclamation, development and, finally, habitation of a long-neglected area.

Medford, N. J., a town of approximately 2000 population, located about 18 miles from Philadelphia and 30 miles from Trenton, furnishes a typical illustration of an inland agricultural center, which during the last few years has come to lean very definitely on motor vehicles for transportation. At one time this town was entirely dependent on the railroad, although some of the residents and farmers of the region drove to the markets by horse and wagon. But as highways improved and as the people learned of the advantages of the motor vehicle, the town turned itself almost entirely over to this newer form of transportation. Except for carload shipments, railroad service was entirely abandoned.

Today the 48 business establishments, mostly retail, three industrial plants and the citizens of Medford depend entirely on the motor vehicle for passenger, express and l.c.l. service. Three motor express lines operate at frequent intervals between Philadelphia and Medford and three times a day between Trenton and Medford. Large wholesale, drug, meat, beverage, ice cream, bakery and dairy establishments in Philadelphia and Trenton use their own trucks to deliver direct to the merchants of the town. Ice is trucked from Mt. Holly, seven miles distant. The utilities, with the exception of electric, are serviced by maintenance departments having truck headquarters in town. Trucks of the electric company operate from Burlington, a town about 15 miles away. In season the farmers of the district ship hundreds of truck loads of berries, tomatoes and potatoes direct from farm to market daily. The three industrials of the town use trucks exclusively in the transportation of textiles, potash and concrete. Rail car load shipments to Medford are confined mostly to such products as coal, feed, building material and farm implements.

L. G. Mingin, president of Medford's Chamber of Commerce, recognizing the beneficence of the motor vehicle and attributing to it the many little comforts and luxuries made available to the community, said: "Ever since our town placed its destiny on the wheels of the motor vehicle we get our mail earlier, we receive our city newspapers on time, and we

are afforded more frequent passenger service and to more points—briefly, we enjoy both social and business advantages we never had before."

Suburban, but not contiguous, to Cleveland is a community which is an excellent illustration of the socializing influence of the truck in areas just outside of large cities. The suburb is Shaker Heights, and is the first of two similar suburbs farther out on the same line. It is well developed and one of the most attractive residential sections in the country. About 10 miles out, this Cleveland suburb, with the exception of a trolley line, is serviced entirely by motor truck.

What the truck means to millions of people living in rural regions is forcibly indicated by figures on the state of Indiana, which shows that 686 towns in this state lack steam railway service. Of this number, 166 possess small industries which ship finished products entirely by truck.

In every direction the opportunities for motor transport to develop its service are increasing. The movement outward from cities continues, new areas must be served and the older ones grow larger and their demands more varied. The commercial car, fostered by manufacturers whose engineers strive to anticipate every need, will not only maintain its vital importance in the world of transportation, but will fill even greater roles in the hands of operators with the vision to grasp the significance of each new development in public demands.

While we are inclined to think of pioneering as pretty well worked out, there are still vast areas into which the populations of congested areas will spill as rapidly as transport facilities make them accessible. There are communities populated by people who want, need and can afford services which the motor truck alone can bring them. They are unprospected fields of opportunity for the man who will go in there and build up the service.

Real estate men who have visions are good cooperators in this sort of prospecting. They know that values increase as the territory surrounding their property comes to line. Some of them know, and more of them should know, that the necessary life comes, not afoot, but on the wings of motorized transport.

How the best advantage can be taken of each opportunity depends largely upon the size and nature of the territory to be served; what its future growth could be; what other facilities are available for industrial development with the cooperation of good transportation service, and many other variables. One element, however, is the same in every case—a man with confidence, who looks to the present by operating dependable equipment, and to the future by serving well and long with durable equipment, will find gold in this prospecting.

**1** The outstanding tire for inter-city and inter-state traffic. **2** Greater in air capacity. **3** Greater in flexibility of sidewalls. **4** Cool running—free from the destructive heat which speed developed in former tires. **5** Absorbs shocks instead of fighting them. **6** Protects loads and mechanism from jolts and jars. **7** Travels all roads at higher average speeds in safety. **8** Holds road on curves, on hills, in snow, and in soft going. **9** Brings tire costs back to levels even lower than they were before trucks stepped up to passenger car speeds.

## Balloon Tires *Goodyear's* newest development for Trucks

**Y**OU know what balloon tires have done for passenger cars. Here they are now for trucks—pioneered by Goodyear.

Put them on your trucks — and end the tire troubles due to high speed, long distance operation.

Let your local Goodyear Truck Tire Service Station Dealer show you how easily the change-over can be made on your present trucks. Specify them on new trucks—manufacturers are rapidly adopting them as optional original equipment.

# GOOD YEAR

Copyright 1930, by The Goodyear Tire & Rubber Co., Inc.



## What Net Profit Do You Want in 1930?

(Continued from page 30)

After a careful study of the business outlook in his territory, let's assume that he decides that all he can expect to do is to equal last year's truck volume of \$100,000. But he only made \$500, or ½ per cent net, on that volume last year, which was far from satisfactory. If he is going to make a better showing this year on the same volume, there is only one way to do it and that is to cut costs. And if that is his problem, right now at the start of the year is the time to face it and plan to meet it.

So Dealer A makes a study of his costs, starting with fixed expenses. He may find, for example, that by rearranging the office work and combining certain jobs, he can reduce the amount of wages charged to truck sales. Also he may decide that by using some of the salesroom for accessory sales, he can increase his profits from this source and, at the same time, fairly relieve truck sales of some of the salesroom rent. As a result of these and other changes, let's assume that he is able to cut his fixed expenses \$2,000 to \$6,500. As he continues his cost study, he doesn't find much chance to cut direct expense so that leaves only used car losses. He concludes that probably by doing all the used truck buying himself instead of letting his salesmen do some of it, and by pushing used truck sales to get faster turnover, he can reduce his used truck loss to 5½ per cent of new truck sales. It is worth trying anyway. So here is the 1930 program he ends up with:

New truck sales .....	\$100,000	
Cost of new truck sales .....	78,000	
Gross profit .....		\$22,000
Fixed expense .....	\$6,500	
Direct expense: 7% of new truck sales .....	7,000	
Used car loss: 5½% of new truck sales .....	5,500	
	\$19,000	19,000
Net profit: 3% of new truck sales		\$3,000

In view of the fact that new truck sales probably will not be as large this year as in 1929, most dealers who work out the question asked in the box heading on page 30, are going to have to do some thinking along about the same lines that Dealer A has proceeded in the foregoing. For most dealers, therefore, the answer to this question is "Cut down expenses."

Even on the record volume of truck sales last year, profits earned by most dealers were unsatisfactory, which is just another way of saying that their expenses were too high. This year costs must be lower if profits on truck sales are to be adequate.

Never before has it been more important for the dealer to examine the various costs which must be paid out of the gross profit on new trucks and to cut them to the bone. 1930 is no year for frills. The business ship must be trimmed for action.

And as you organize your truck sales department for profitable operation under the conditions that are likely to prevail this year, don't overlook the opportunity you have to make your shop pay larger profits in 1930.

## Snow Patrols Go to Medium Trucks

(Continued from page 24)

sional emergency work. It is not intended to infer that the heavy and light tractor, and the heavier V or rotary plows are not essential snow-removal equipment, for it is well known that the heavier units are indispensable in widening operations, especially after the snow has reached a certain depth. The foregoing discussion, however, applies chiefly to flat, rolling or hilly country and not to mountainous regions where the tractor is often found to be more efficient than the truck.

The trucks used in patrol work are generally housed in heated garages or shops in order that they may be maintained in proper condition and made quickly available for service. The personnel to operate the equipment is carefully selected beforehand and held subject to call on short notice.

In patrol work the motor truck is generally used for motive power to propel various types of plows. Where only light snowfalls are encountered, the ordinary road grader is still useful, but with heavier snows, the straight-blade or V-plows are often used, either with or without wing-widening attachments. Of the two styles, the V-plow is considered the most effective for opening the first lane, and the straight-blade plow is preferred for the return trips in preliminary widening to provide a channel for two-way traffic. Usually the regular maintenance trucks are used, and those of medium tonnage, with a four-wheel drive and pneumatic tires, are preferred. The trucks are loaded with weights in most instances so as to provide better traction.

An ideal outfit for a patrol covering from 20 to 25 miles of highway in sections where the annual snowfall ranges from 75 to 132 in. should include one straight-blade plow about 24 in. in height, one V-shaped plow 30 to 36 in. high at the apex, and one heavy displacement or rotary plow for widening purposes. The lighter displacement plows should be mounted on 3½-ton truck with six-cylinder engines if they are available. A tractor should be available for propelling either of the widening units.

All types of snow removal equipment are suited in some degree to widening work. At the beginning of the season, the lighter units are often capable of widening the passage to the desired width. Later, when the snow has accumulated at the edge of the road, the heavier truck plows are

brought into play, and as the season advances, the larger tractor-mounted V and rotary units are pressed into service. On account of the greater speed and lower operating costs, the truck-propelled displacement or rotary plows should be used for widening work as long as they provide adequate service. When their capacity becomes inadequate, the tractor-mounted V or rotary plows may be resorted to. Trucks with widening attachments may be driven at fairly high rates of speed when being moved from one location to another, but tractors cover the intervening distance between points of service at comparatively slow speeds. To eliminate the loss of time consumed in the transfer of slow-moving equipment, truck-drawn trailers have been built on which the heavy plows and tractors are loaded for rapid transportation.

## Take the Salesman to the Junk Yard

(Continued from page 23)

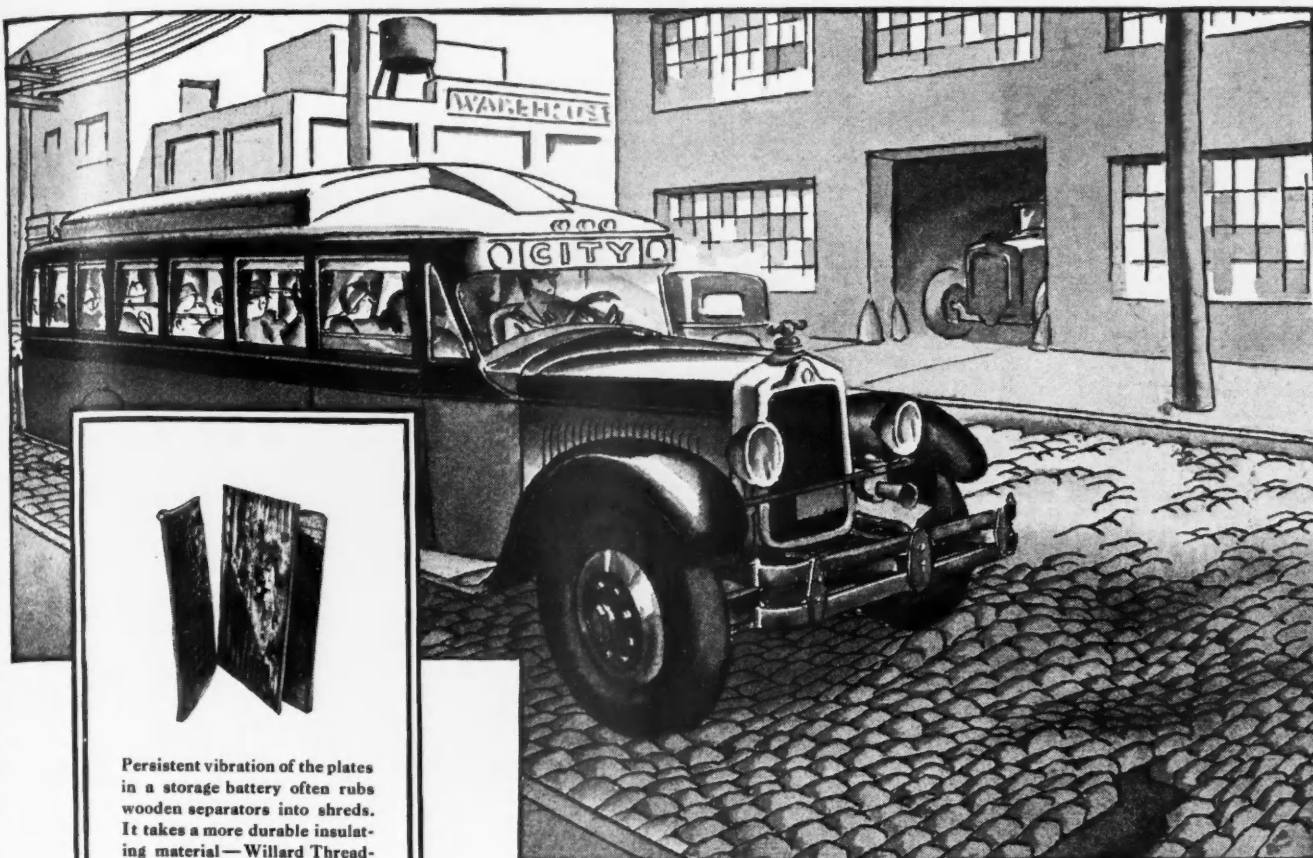
ence of \$705 between what the salesman wanted to sell me the truck for and what the junk man asked, and mind you I played fair with the salesman and let him pass on this junk truck and give his opinion as to whether it was equal to the one he wanted me to take in trade.

We then called on the next junk yard where there were two of the same model trucks offered me on other deals. One of them that the salesman wanted an allowance of \$650 we could purchase for \$75, a difference of \$575 and on the other one which they had been trying to persuade me to allow \$900 could be purchased from this junker for \$225, a difference of \$675.

By this time the group of salesmen commenced to look pretty sheepish and I told them there were still several other yards to visit and asked them if they wanted to go or if they had enough—the answer was unanimous, "Enough."

Now the reaction has been this. Previous to taking these men to the junk yard I had just been talking to them about this over-allowance, but by taking them right into the junk yard and proving my statements, no further talk was necessary, they were actually shown how ridiculous were the allowances that they tried to have me make on old trucks they wanted to trade, and this truth was brought right home to them.

Today these same salesmen are now going out and putting up a real battle with their prospects over the trade allowance instead of coming in and battling me. You would be surprised to see the different type of deals they are bringing in, deals which are now giving us a chance to make a profit, and psychologically the effect on the salesmen has been amusing. When they now come in with an order it is to brag about their ability to trade these old trucks at a low dollar.



Persistent vibration of the plates in a storage battery often rubs wooden separators into shreds. It takes a more durable insulating material—Willard Thread-Rubber—to withstand the punishment of truck and bus service.

Here's what rough roads do to batteries . . . . *Willard fortified quality withstands such punishment in either bus or truck use.*

Willard Storage Battery for Bus Service,  
Type GHLR-29



No matter how tightly a battery is assembled, no matter how firmly it is clamped in the frame, there is always vibration between its plates. Ordinary wood insulators eventually wear through under this action, a short circuit results and the battery goes dead.

Willard batteries with Thread-Rubber Insulation are doubly fortified against such failure. Willard plates are molded, not stamped, and have no sharp edges to cut into the insulation. And Willard Thread-Rubber Insulation is virtually wear-proof, even under adverse conditions.

**Willard** STORAGE BATTERIES  
CLEVELAND • OHIO



## Reo Offers Dealers Equipment Service

(Continued from page 33)

of the requirements in that direction and decided to enter the field with a fairly highly vocationalized line of equipment.

Like most manufacturers, Reo has had a vocationalized sales plan and now matches the efforts in the field with factory mounted equipment to back it up.

Reo's own "Progress in Transportation" Exhibition held in New York concurrent with the National Show and to be duplicated in Chicago fires the first shots in this new and important development, and the variety of equipments shown does not belie their new slogan "Everything on Wheels," I, as head of the Speed Wagon division, add, "Within Reason."

Our program does not denote further complication in the manufacturing divisions, but it will simplify our operations to a big extent and help hold down manufacturing cost which at this juncture has a natural tendency to increase in our industry.

The Equipment Division will not only constitute a direct help to our dealers but it will help us to hold more strongly than in recent years to standardization on the assembly line. Options in tire sizes, with corresponding gear ratio changes plus a wide variety of wheel-bases, is the bane of the production manager's life, but now by standardizing in production and running the options through the same department with the vocationalized equipment, we will be able to plan our production better and give a service so long and eagerly sought.

But best of all, it will open the eyes of our field organization to new sales opportunities and make it possible for them to better fit the Speed Wagon to the requirement and get the order filled without losing much precious time during the process of closing the sale while groping around for a source of supply.

We will not produce any of this special equipment but will cooperate with builders of legitimate bodies and time and labor saving devices by giving them a chance to get their products before our dealers. The list will probably never be closed or "final" written on it. We will procure the equipment from the builders for our dealers, mount it, paint it and ship it to them ready to go in transportation services.

On the better and faster selling merchandise, we will probably take a fairly neutral stand with the builders, recognizing competition among them.

We have no thought of entering into competition with local equipment houses who have long established connections with our dealers. What we will do is to make it easy for the dealer who has no satisfactory source of supply in his section.

The price of special equipment is, generally speaking, too high, due largely to a weakness in distribution methods and the lack of quantity. The fact that it is special is the best excuse of present price levels. Producers having no widely organized outlets are helpless. Our only desire is to assist in a big way to promote standardization as far as is well for the merchandise that is practically special and in so doing bring about more or less of an interchangeability of the products of isolated independent body and equipment makers.

We feel that there is much of this to be done in the truck industry. There is no uniformity in sizes of even the types of bodies known as standard factory models. The truck and equipment industry can contribute much to the present economic situation. It is in line with the President's policy.

If the truck body business can be swung around to some such program as this, there will eventually be a narrowing of the present wide spread between a factory production body and a so-called special body.

Complete standardization, of course, can never be effected. The vocationalized aspect precludes that, but we do believe that a mid-position can be accomplished.

But best of all, we think our new Equipment Division will expel many of the discouragements the dealer meets up with and help him to visualize new outlets for Speed Wagons in his community.

## There's No Trick to Making the Shop Pay

(Continued from page 32)

service.' All work coming under this classification is done without making out a work ticket.

"It has been my experience that it pays to contact with the customer on other than just an impersonal business basis. All our service men take a personal interest in the condition of customers' vehicles. One of the duties of the service manager is to visit fleet operators and talk over service and operating problems.

"After a job leaves the shop, we don't permit our contact to end there. Promptly, from three to five days after the job leaves the shop, we communicate with the owner by telephone inquiring if our job is satisfactory and has met with his expectations. In this way, we not only prevent little misunderstandings from developing into permanent ruptures but succeed in maintaining a contact that might otherwise slip away."

The branch also attracts many customers by its "Protective Maintenance" service which is now available throughout the entire Reo organization. The service, which costs the truck operator \$52.80, includes lubri-

cation every 1000 miles and lubrication and inspection every 2000 miles. If the operator brings his vehicle into any Reo shop every 150 miles of the stipulated time of the lubrication and inspection period, the service is rebated 10 per cent, which brings the cost of the service down to \$56.

In the opinion of Mr. Nash, the sale of service "specials" prepared on a monthly or seasonal basis is a very effective way not only of increasing the revenue of the shop but of promoting customer interest in the organization, its facilities and personnel. "Specials" consist of special prices on special jobs. Two of the favorite offerings of the Newark branch are designated as the winter and summer specials. The winter special, for example, consists of 15 operations which sell for \$13.25. Operations include such items as drain and flush out radiator, refill with clean water and alcohol; drain crankcase, clean filter and refill; drain and refill transmission and differential; check battery; check and adjust hose connections, stuffing box, packing, head bolts, spark plugs, carburetor; tune up engine, etc. All these operations are listed in detail on an attractive two-page leaflet that also contains advice on cold weather operations and accessory suggestions such as radiator covers and shutters.

Mr. Nash is a firm believer in the efficacy of the flat rate method of charging for service, saying, "the appeal of flat rates is generally recognized, but I feel that our price schedule is particularly attractive. Our prices are based on numerous close-time studies in which the factory has collaborated and our men are paid on piece work. I am satisfied that our prices are right, and because of them we can sell jobs easier, assure ourselves a satisfactory profit and avoid misunderstanding regarding billing."

## Quarter-Tonners Court Parcel Field

(Continued from page 21)

manufacturers' reasoning is evidenced by the fact that many companies who have a parcel delivery problem have looked into the propositions with considerable interest.

Other fleets which these companies expect to be able to serve include such companies as large baking concerns, milk companies, and others who conduct a door-to-door delivery business.

In other words, the appeal of these companies is wholly an economic one which can be summed up as follows: They propose to give the parcel deliverer a small unit in which there is no dead weight to be propelled, which is more economical in oil and fuel consumption than those in use today, has a lower first cost, and can be handled with a maximum of ease in traffic such as is found in today's city streets.



# Commercial Car Specifications—Corrected Monthly

The Specifications, Chassis Prices, Etc., Are Corrected Each Month From Data Supplied Direct by the Makers. Gasoline Tractor-Trucks Will be Found at the End of Gasoline Commercial Cars

• Changes  
† New Models

Those Chassis Which Are Sold and Recommended for Bus Use Are Designated by Reference Sign (\$) in Front of the Name

(Where prices are not given it is because we have been unable to get them from authoritative sources)

Key of abbreviations page 94

Trade Name and Model	General			Engine				Electrical System		Clutch	Gearset		Rear Axle	Gear Ratios		Front Axle Make and Model	Steering Gear (Make)	Standard Wheelbase											
	Chassis Price	Tire Size		Make and Model	Number of Cylinders	N.A.C.C. Rated H.P.	Valve Arrangement	Oiling System	Governor (Make)		Radiator (Make)	Carburetor (Make)		Fuel System	Ignition System			Generator and Starter (Make)	Type and Make	Make and Model		Location	No. of Forward Speeds	Universals (Make)	Make and Model	Final Drive	Type	Total Reduction in High	Total Reduction in Low
		Standard Wheelbase (inches)	Maximum Wheelbase							Furnished			Cab to rear axle		Cab to front axle														
<b>1000 Pounds</b>																													
Chevrolet Int. Com.	400	107	B 4.50/20	B 4.50x20	Own	6-3 1/2x3 3/4	26.3	H	PG	Non	Har	Car	V	D-R	D-R	U	3	Own	Own Int.	Own	20 1/2	18 1/2	Own	Own Int.	20 1/2	12.08	4.7	28"	Own Int.
Dodge Brothers	525	109	B 4.75/28	B 4.75x28	Own	4-3/8x4 1/4	21.0	L	PC	Non	McG	Car	V	D-R	D-R	U	3	Own	Own	Own	20 1/2	19 1/2	Own	Own	20 1/2	4.87	16.10	28"	Own
Durant Com. Ch.	495	107	B 4.75/28	B 4.75x28	Con	4-3/8x4 1/4	18.2	L	PC	Non	Fed	Til	V	D-R	D-R	U	3	Own	Own	Own	20 1/2	19 1/2	Own	Own	20 1/2	4.87	16.10	28"	Own
Fargo Fuel	595	107	B 5.00/19	B 5.00x19	Own	6-3 3/4x4 1/4	21.6	L	PC	Non	Own	Str	V	N-E	N-E	U	3	Own	Pontiac	Pontiac	20 1/2	19 1/2	Own	Pontiac	20 1/2	4.7	14.67	28"	Own
Gen. Mot. T-11-1001	625	109 1/2	B 5.00/19	B 5.00x19	Pontiac	6-3 3/4x4 1/4	26.3	L	PC	Non	Lon	Mar	V	N-E	N-E	U	3	Own	Pontiac	Pontiac	20 1/2	19 1/2	Own	Pontiac	20 1/2	4.42	14.67	28"	Own
Whippet 96A	405	103 1/2	B 4.75/28	B 4.75x28	Own	4-3 1/4x4 1/4	15.6	L	PC	Non	Own	Til	V	A-L	A-L	U	3	Own	P. B&B	Own	20 1/2	19 1/2	Own	Own	20 1/2	4.45	14.7	28"	Own
<b>1500 Pounds</b>																													
Dodge Brothers	675	124	B 5.50/20	B 5.50x20	Own	4-3/8x4 1/4	21.0	L	PC	Non	Fed	Car	V	D-R	D-R	U	3	Own	P. B&B	W-G	20 1/2	19 1/2	Own	Own	20 1/2	5.63	21.16	30"	Own
Dodge Brothers	725	124	B 5.50/20	B 5.50x20	Own	4-3/8x4 1/4	21.0	L	PC	Non	Fed	Car	V	D-R	D-R	U	3	Own	P. B&B	W-G	20 1/2	19 1/2	Own	Own	20 1/2	5.63	21.16	30"	Own
Dodge Brothers	725	124	B 5.50/20	B 5.50x20	Own	4-3/8x4 1/4	21.0	L	PC	Non	Fed	Car	V	D-R	D-R	U	3	Own	P. B&B	W-G	20 1/2	19 1/2	Own	Own	20 1/2	5.63	21.16	30"	Own
Dodge Brothers	825	124	B 5.50/20	B 5.50x20	Own	6-3 3/4x3 3/4	27.3	L	PC	Non	Fed	Zen	V	N-E	N-E	U	3	Own	P. B&B	W-G	20 1/2	19 1/2	Own	Own	20 1/2	5.11	19.21	30"	Own
Dodge Brothers	595	110 1/2	B 5.50/18	B 5.50x18	Own Super 6	6-3 3/4x3 3/4	18.2	L	SP	Non	Fed	Zen	V	A-L	A-L	U	3	Own	P. B&B	W-G	20 1/2	19 1/2	Own	Own	20 1/2	5.6	18.16	30"	Own
Fargo Clipper	725	127 1/2	B 5.50/18	B 5.50x18	Own	6-3 3/4x4 1/4	23.4	L	PC	Non	Own	Str	V	D-R	D-R	U	3	Own	D. Own	Own	20 1/2	19 1/2	Own	Own	20 1/2	4.9	14.3	30"	Own
Gen. Mot. T-25-2501	1285	127 1/2	B 5.50/20	B 5.50x20	Buick	6-3 1/4x4 1/4	26.3	L	PC	Non	Lon	Mar	V	D-R	D-R	U	3	Own	Mun	Own	20 1/2	19 1/2	Own	Own	20 1/2	6.14	34.11	30"	Own
Gen. Mot. T-25-2502	1245	127 1/2	B 5.50/20	B 5.50x20	Buick	6-3 1/4x4 1/4	26.3	L	PC	Non	Lon	Mar	V	D-R	D-R	U	3	Own	Mun	Own	20 1/2	19 1/2	Own	Own	20 1/2	6.14	34.11	30"	Own
Gen. Mot. T-25-2503	1165	127 1/2	B 5.50/20	B 5.50x20	Wau XA	6-3 1/4x4 1/4	26.3	L	PC	Non	Lon	Mar	V	D-R	D-R	U	3	Own	Mun	Own	20 1/2	19 1/2	Own	Own	20 1/2	6.14	34.11	30"	Own
Int. Harvester Spec. Del.	124	124	B 5.25/30	B 5.25x30	Con	4-3 1/2x4 1/4	19.6	L	PC	Non	Fed	Zen	V	D-R	D-R	U	3	Own	Reg	B-L 20	20 1/2	19 1/2	Own	Own	20 1/2	4.46	15.1	30"	Own
Kleiber	1170	121	B 5.50/20	B 5.50x20	Con	6-2 1/2x4 1/4	19.8	L	PC	Non	Fed	Zen	V	D-R	D-R	U	3	Own	B-L	W-G	20 1/2	19 1/2	Own	Own	20 1/2	4.9	14.8	30"	Own
Rugby Fast Mail	725	110	B 5.00/29	B 5.00x29	Con	6-3 3/4x4 1/4	19.8	L	PC	Non	Fed	Til	V	D-R	D-R	U	3	Own	P. Own	W-G	20 1/2	19 1/2	Own	Own	20 1/2	4.7	14.3	30"	Own
Studebaker GN-P	845	115	B 6.00/19	B 6.00x19	Own	6-3 3/4x4 1/4	27.3	L	PC	Non	Lon	Str	V	D-R	D-R	U	3	Own	D. Lon	W-G	20 1/2	19 1/2	Own	Own	20 1/2	4.7	14.3	30"	Own
<b>1 Ton</b>																													
Acme 17	136	136	P 30x5	P 30x5	Con 20L	6-2 1/2x4 1/4	18.2	L	PC	Non	Per	Til	V	A-L	A-L	U	4	Blo	Ful WO	Own	20 1/2	19 1/2	Own	Own	20 1/2	5.83	35.9	30"	Own
Acorn 20P	1185	132	P 30x5	P 30x5	Con 16C	6-3 3/4x4 1/4	27.3	L	PC	Non	Chi	Str	V	A-L	A-L	U	4	Blo	Ful DU10	Own	20 1/2	19 1/2	Own	Own	20 1/2	4.5	35.9	30"	Own
Biederman A-6	1332	145	P 30x5	P 30x5	Lyc WRG	6-2 1/2x4 1/4	18.2	L	PC	Non	Own	Zen	V	A-L	A-L	U	4	Blo	B-L 31	Own	20 1/2	19 1/2	Own	Own	20 1/2	6.83	35.9	30"	Own
Clydesdale 16	140	138	P 30x5	P 30x5	Con 8C	6-3 3/4x4 1/4	25.3	L	PC	Non	Own	Zen	V	Boe-A	Boe-A	U	4	Blo	B-L 31	Own	20 1/2	19 1/2	Own	Own	20 1/2	5.1	25.6	30"	Own
Commerce S11	1000	142	P 30x5	P 30x5	Con H56	6-3 3/4x4 1/4	25.3	L	PC	Non	Own	Zen	V	Boe-A	Boe-A	U	4	Blo	B-L 31	Own	20 1/2	19 1/2	Own	Own	20 1/2	5.1	25.6	30"	Own
Denby 41	128	135	P 30x5	P 30x5	Bud DX	4-4 1/4x4 1/4	22.5	L	PC	Non	Own	Zen	V	A-L	A-L	U	4	Blo	B-L 31	Own	20 1/2	19 1/2	Own	Own	20 1/2	5.8	23.2	30"	Own
Diamond T-215	885	135	P 30x5	P 30x5	Bud DX	6-3 3/4x4 1/4	22.5	L	PC	Non	G&O	Zen	V	A-L	A-L	U	4	Blo	B-L 31	Own	20 1/2	19 1/2	Own	Own	20 1/2	5.8	23.2	30"	Own
Diamond T-200	785	128 1/2	P 30x5	P 30x5	Bud	6-3 3/4x4 1/4	22.5	L	PC	Non	G&O	Zen	V	A-L	A-L	U	4	Blo	B-L 31	Own	20 1/2	19 1/2	Own	Own	20 1/2	5.8	23.2	30"	Own
Dodge Brothers	1110	140	P 32x6	P 32x6	Own	6-3 3/4x3 3/4	27.3	L	PC	Non	Fed	Site	V	N-E	N-E	U	4	U-P	W-G	Own	20 1/2	19 1/2	Own	Own	20 1/2	5.67	26.40	30"	Own
Dodge Brothers	1065	140	P 30x5	P 30x5	Own	6-3 3/4x3 3/4	27.3	L	PC	Non	Fed	Site	V	N-E	N-E	U	4	U-P	W-G	Own	20 1/2	19 1/2	Own	Own	20 1/2	5.67	26.40	30"	Own
Dodge Brothers	1100	140	P 33x5	P 33x5	Own	6-3 3/4x3 3/4	27.3	L	PC	Non	Fed	Site	V	N-E	N-E	U	4	U-P	W-G	Own	20 1/2	19 1/2	Own	Own	20 1/2	5.67	26.40	30"	Own
Dodge Brothers	745	133	P 30x5	P 30x5	Own	4-3/8x4 1/4	21.0	L	PC	Non	Han	Car	V	D-R	D-R	U	4	U-P	Cla	Own	20 1/2	19 1/2	Own	Own	20 1/2	5.6	36.1	30"	Own
Dodge Brothers	760	133	P 30x5	P 30x5	Own	4-3/8x4 1/4	21.0	L	PC	Non	Han	Car	V	D-R	D-R	U	4	U-P	Cla	Own	20 1/2	19 1/2	Own	Own	20 1/2	5.6	36.1	30"	Own
Dodge Brothers	845	133	P 30x5	P 30x5	Own	6-3 3/4x3 3/4	27.3	L	PC	Non	Fed	Car	V	N-E	N-E	U	4	U-P	Cla	Own	20 1/2	19 1/2	Own	Own	20 1/2	5.1	33.4	30"	Own
Dodge Brothers	860	133	P 30x5	P 30x5	Own	6-3 3/4x3 3/4	27.3	L	PC	Non	Fed	Car	V	N-E	N-E	U	4	U-P	Cla	Own	20 1/2	19 1/2	Own	Own	20 1/2	5.1	33.4	30"	Own
Fargo Freight	795	127	B 6.00/20	B 6.00x20	Own	6-3 3/4x4 1/4	22.5	L	PC	Non	Own	Str	V	N-E	N-E	U	4	U-P	Own	Own	20 1/2	19 1/2	Own	Own	20 1/2	5.67	34.56	30"	Own
Federal 4P-W	132	132	P 30x5	P 30x5	Wau XAK	4-3/8x4 1/4	22.5	L	PC	Non	Lon	Str	V	N-E	N-E	U	4	U-P	Own	Own	20 1/2	19 1/2	Own	Own	20 1/2	5.67	34.56	30"	Own
Federal 4P-W	132	132	P 30x5	P 30x5	Con 17E	4-3/8x4 1/4	22.5	L	PC	Non	Lon	Zen	V	D-R	D-R	U	4	Spi	W-G T9	Own	20 1/2	19 1/2	Own	Own	20 1/2	5.40	34.56	30"	Own
Federal 4P-W	132	132	P 30x5	P 30x5	Con 17E	4-3/8x4 1/4	22.5	L	PC	Non	Lon	Zen	V	D-R	D-R	U	4	Spi	W-G T9	Own	20 1/2	19 1/2	Own	Own	20 1/2	5.40	34.56	30"	Own
Federal 4P-W	132	132	P 30x5	P 30x5	Con 17E	4-3/8x4 1/4	22.5	L	PC	Non	Lon	Zen	V	D-R	D-R	U	4	Spi	W-G T9	Own	20 1/2	19 1/2	Own	Own	20 1/2	5.40	34.56	30"	Own
Federal 4P-W	132	132	P 30x5	P 30x5	Con 17E	4-3/8x4 1/4	22.5	L	PC	Non	Lon	Zen	V	D-R	D-R	U	4	Spi	W-G T9	Own	20 1/2	19 1/2	Own	Own	20 1/2	5.40	34.56	30"	Own
Federal 4P-W	132	132	P 30x5	P 30x5	Con 17E	4-3/8x4 1/4	22.5	L	PC	Non	Lon	Zen	V	D-R	D-R	U	4	Spi	W-G T9	Own	20 1/2	19 1/2	Own	Own	20 1/2	5.40	34.56	30"	Own
Federal 4P-W	132	132	P 30x5	P 30x5	Con 17E	4-3/8x4 1/4	22.5	L	PC	Non	Lon	Zen	V	D-R	D-R	U	4	Spi	W-G T9	Own	20 1/2	19 1/2	Own	Own	20 1/2	5.40	34.56	30"	Own
Federal 4P-W	132	132	P 30x5	P 30x5	Con 17E	4-3/8x4 1/4	22.5	L	PC	Non	Lon	Zen	V	D-R	D-R	U	4	Spi	W-G T9	Own	20 1/2	19 1/2	Own	Own	20 1/2	5.40	34.56	30"	Own
Federal 4P-W	132	132	P 30x5	P 30x5	Con 17E	4-3/8x4 1/4	22.5	L	PC	Non	Lon	Zen	V	D-R	D-R	U	4	Spi	W-G T9	Own	20 1/2	19 1/2	Own	Own	20 1/2	5.40	34.56	30"	Own
Federal 4P-W	132	132	P 30x5	P 30x5	Con 17E	4-3/8x4 1/4	22.5	L	PC	Non	Lon	Zen	V	D-R	D-R	U	4	Spi	W-G T9	Own	20 1/2	19 1/2	Own	Own	20 1/2	5.40	34.56	30"	Own
Federal 4P-W	132	132	P 30x5	P 30x5	Con 17E	4-3/8x4 1/4	22.5	L	PC	Non	Lon	Zen	V	D-R	D-R	U	4	Spi	W-G T9	Own	20 1/2	19 1/2	Own	Own					

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Autocoll. Ch.....	170	S 34x5	S 34x8	Con 8R
Biederman.....	166°			





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**Key of abbreviations page 94**

Trade Name and Model	General			Engine						Electrical System		Clutch	Gearset		Rear Axle		Gear Ratios		Front Axle Make and Model	Steering Gear (Make)	Standard Wheelbase						
	Chassis Price	Standard Wheelbase (inches)	Maximum Wheelbase (inches)	Tire Size		Bore and Stroke	N.A.C.C. Rated H.P.	Valve Arrangement	Oiling System	Governor (Make)	Radiator (Make)		Fuel System		Ignition System (Make)	Generator and Starter (Make)	Type and Make	Make and Model			Location	No. of Forward Speeds	Universals (Make)				
				Front (inches)	Rear (inches)								Carburetor (Make)	Fuel Feed													
2½ Ton—Cont'd																											
Brooklyn SY	151½	178½	181	P 34x7	P 34x7	Wis Y	27.25	H	PC	K.P.	G&O	Zen	V	L-N	L-N	D-B-L	B-L-35	U	4	Spl	Col 5503	Ros	129	Opt	73	Opt	5145
Chicago 25A	135	195	195	DP34x7	DP34x7	Wau XK	25.36	L	FP	Wau	Chi	Zen	G	Apo	Apo	D-B-L	B-L-35	U	4	Spl	Tim 55000H	Ros	129	Opt	73	Opt	5145
Chicago 30B	138	222	222	S 36x10	S 36x10	Wau Y	25.36	L	FP	Wau	Chi	Zen	G	Apo	Apo	D-B-L	B-L-35	U	4	Spl	Tim 55000H	Ros	129	Opt	73	Opt	5145
Cyclone 25D	156	144	144	S 36x7	S 36x7	Bud DW6	27.27	L	FP	Bud	Wau	Zen	V	Boe-A	Boe-A	D-B-L	B-L-35	U	4	Spl	Tim 55000H	Ros	129	Opt	73	Opt	5145
Commerce 40	4580	178	185	DP36x6	DP36x6	Bud BUS	35.41	L	FP	Non	Lon	Zen	V	A-L	A-L	D-B-L	B-L-35	U	4	Spl	Wis 5566	Ros	108	78	78	78	6400
Corbett 126V	3240	168	185	DP32x6	DP32x6	Bud DS6	31.2	L	FP	Non	Lon	Zen	V	A-L	A-L	D-B-L	B-L-35	U	4	Spl	Tim 55000H	Ros	108	78	78	78	6400
Defiance OXH	175	220	220	DP32x6	DP32x6	Con 16R	33.7	L	FP	Non	Lon	Zen	V	Eig	Eig	D-B-L	B-L-35	U	4	Spl	Tim 55000H	Ros	108	78	78	78	6400
Denby 43	175	240	240	DP32x6	DP32x6	Her WXC	33.7	L	FP	Non	Lon	Zen	V	A-L	A-L	D-B-L	B-L-35	U	4	Spl	Tim 55000H	Ros	108	78	78	78	6400
Diamond T550	155	183½	183½	S 36x8	S 36x8	Her WXC	33.7	L	FP	Non	Lon	Zen	V	A-L	A-L	D-B-L	B-L-35	U	4	Spl	Tim 55000H	Ros	108	78	78	78	6400
Diamond T502	2675	173	199	DP34x7	DP34x7	Her WXC	33.7	L	FP	Non	Lon	Zen	V	A-L	A-L	D-B-L	B-L-35	U	4	Spl	Tim 55000H	Ros	108	78	78	78	6400
Diamond T505	2875	171½	196½	P 30x5	P 30x5	Her WXC	33.7	L	FP	Non	Lon	Zen	V	A-L	A-L	D-B-L	B-L-35	U	4	Spl	Tim 55000H	Ros	108	78	78	78	6400
Eagle 6-25	3100	178	196	DP32x6	DP32x6	Wau XK	33.7	L	FP	Non	Lon	Zen	V	A-L	A-L	D-B-L	B-L-35	U	4	Spl	Tim 55000H	Ros	108	78	78	78	6400
Federal 250	151	176	176	P 32x6	P 32x6	Con 16C	33.7	L	FP	Non	Lon	Zen	V	A-L	A-L	D-B-L	B-L-35	U	4	Spl	Tim 55000H	Ros	108	78	78	78	6400
Federal 2½ Ton T10B	165	180	180	DP34x7	DP34x7	Con 16C	33.7	L	FP	Non	Lon	Zen	V	A-L	A-L	D-B-L	B-L-35	U	4	Spl	Tim 55000H	Ros	108	78	78	78	6400
Federal 2½ Ton T10W	155	180	180	DP32x6	DP32x6	Con 16R	33.7	L	FP	Non	Lon	Zen	V	A-L	A-L	D-B-L	B-L-35	U	4	Spl	Tim 55000H	Ros	108	78	78	78	6400
Fisher Heavy Duty	155	190	190	S 36x8	S 36x8	Wau XL	33.7	L	FP	Non	Lon	Zen	V	A-L	A-L	D-B-L	B-L-35	U	4	Spl	Tim 55000H	Ros	108	78	78	78	6400
Fisher Heavy Duty	133	190	190	S 36x8	S 36x8	Wau XL	33.7	L	FP	Non	Lon	Zen	V	A-L	A-L	D-B-L	B-L-35	U	4	Spl	Tim 55000H	Ros	108	78	78	78	6400
F. W. D. H-6	4580	175	192	DP36x6	DP36x6	Bud BUS	33.7	L	FP	Non	Lon	Zen	V	A-L	A-L	D-B-L	B-L-35	U	4	Spl	Tim 55000H	Ros	108	78	78	78	6400
Garford 40	3240	168	175	P 38x9	P 38x9	Bud DS6	31.2	L	FP	Non	Lon	Zen	V	A-L	A-L	D-B-L	B-L-35	U	4	Spl	Tim 55000H	Ros	108	78	78	78	6400
Gen. Mot. T42-4001	1855	136	175	P 32x6	P 32x6	Buck	31.2	L	FP	Non	Lon	Zen	V	A-L	A-L	D-B-L	B-L-35	U	4	Spl	Tim 55000H	Ros	108	78	78	78	6400
Gen. Mot. T42-4002	1790	136	175	P 32x6	P 32x6	Buck	31.2	L	FP	Non	Lon	Zen	V	A-L	A-L	D-B-L	B-L-35	U	4	Spl	Tim 55000H	Ros	108	78	78	78	6400
Gen. Mot. T42-4003	1790	136	175	P 32x6	P 32x6	Buck	31.2	L	FP	Non	Lon	Zen	V	A-L	A-L	D-B-L	B-L-35	U	4	Spl	Tim 55000H	Ros	108	78	78	78	6400
Gen. Mot. T42-4004	1790	136	175	P 32x6	P 32x6	Buck	31.2	L	FP	Non	Lon	Zen	V	A-L	A-L	D-B-L	B-L-35	U	4	Spl	Tim 55000H	Ros	108	78	78	78	6400
Gen. Mot. T42-4005	1790	136	175	P 32x6	P 32x6	Buck	31.2	L	FP	Non	Lon	Zen	V	A-L	A-L	D-B-L	B-L-35	U	4	Spl	Tim 55000H	Ros	108	78	78	78	6400
Gen. Mot. T42-4006	1790	136	175	P 32x6	P 32x6	Buck	31.2	L	FP	Non	Lon	Zen	V	A-L	A-L	D-B-L	B-L-35	U	4	Spl	Tim 55000H	Ros	108	78	78	78	6400
Gen. Mot. T42-4007	1790	136	175	P 32x6	P 32x6	Buck	31.2	L	FP	Non	Lon	Zen	V	A-L	A-L	D-B-L	B-L-35	U	4	Spl	Tim 55000H	Ros	108	78	78	78	6400
Gen. Mot. T42-4008	1790	136	175	P 32x6	P 32x6	Buck	31.2	L	FP	Non	Lon	Zen	V	A-L	A-L	D-B-L	B-L-35	U	4	Spl	Tim 55000H	Ros	108	78	78	78	6400
Gen. Mot. T42-4009	1790	136	175	P 32x6	P 32x6	Buck	31.2	L	FP	Non	Lon	Zen	V	A-L	A-L	D-B-L	B-L-35	U	4	Spl	Tim 55000H	Ros	108	78	78	78	6400
Gen. Mot. T42-4010	1790	136	175	P 32x6	P 32x6	Buck	31.2	L	FP	Non	Lon	Zen	V	A-L	A-L	D-B-L	B-L-35	U	4	Spl	Tim 55000H	Ros	108	78	78	78	6400
Gen. Mot. T42-4011	1790	136	175	P 32x6	P 32x6	Buck	31.2	L	FP	Non	Lon	Zen	V	A-L	A-L	D-B-L	B-L-35	U	4	Spl	Tim 55000H	Ros	108	78	78	78	6400
Gen. Mot. T42-4012	1790	136	175	P 32x6	P 32x6	Buck	31.2	L	FP	Non	Lon	Zen	V	A-L	A-L	D-B-L	B-L-35	U	4	Spl	Tim 55000H	Ros	108	78	78	78	6400
Gen. Mot. T42-4013	1790	136	175	P 32x6	P 32x6	Buck	31.2	L	FP	Non	Lon	Zen	V	A-L	A-L	D-B-L	B-L-35	U	4	Spl	Tim 55000H	Ros	108	78	78	78	6400
Gen. Mot. T42-4014	1790	136	175	P 32x6	P 32x6	Buck	31.2	L	FP	Non	Lon	Zen	V	A-L	A-L	D-B-L	B-L-35	U	4	Spl	Tim 55000H	Ros	108	78	78	78	6400
Gen. Mot. T42-4015	1790	136	175	P 32x6	P 32x6	Buck	31.2	L	FP	Non	Lon	Zen	V	A-L	A-L	D-B-L	B-L-35	U	4	Spl	Tim 55000H	Ros	108	78	78	78	6400
Gen. Mot. T42-4016	1790	136	175	P 32x6	P 32x6	Buck	31.2	L	FP	Non	Lon	Zen	V	A-L	A-L	D-B-L	B-L-35	U	4	Spl	Tim 55000H	Ros	108	78	78	78	6400
Gen. Mot. T42-4017	1790	136	175	P 32x6	P 32x6	Buck	31.2	L	FP	Non	Lon	Zen	V	A-L	A-L	D-B-L	B-L-35	U	4	Spl	Tim 55000H	Ros	108	78	78	78	6400
Gen. Mot. T42-4018	1790	136	175	P 32x6	P 32x6	Buck	31.2	L	FP	Non	Lon	Zen	V	A-L	A-L	D-B-L	B-L-35	U	4	Spl	Tim 55000H	Ros	108	78	78	78	6400
Gen. Mot. T42-4019	1790	136	175	P 32x6	P 32x6	Buck	31.2	L	FP	Non	Lon	Zen	V	A-L	A-L	D-B-L	B-L-35	U	4	Spl	Tim 55000H	Ros	108	78	78	78	6400
Gen. Mot. T42-4020	1790	136	175	P 32x6	P 32x6	Buck	31.2	L	FP	Non	Lon	Zen	V	A-L	A-L	D-B-L	B-L-35	U	4	Spl	Tim 55000H	Ros	108	78	78	78	6400
Gen. Mot. T42-4021	1790	136	175	P 32x6	P 32x6	Buck	31.2	L	FP	Non	Lon	Zen	V	A-L	A-L	D-B-L	B-L-35	U	4	Spl	Tim 55000H	Ros	108	78	78	78	6400
Gen. Mot. T42-4022	1790	136	175	P 32x6	P 32x6	Buck	31.2	L	FP	Non	Lon	Zen	V	A-L	A-L	D-B-L	B-L-35	U	4	Spl	Tim 55000H	Ros	108	78	78	78	6400
Gen. Mot. T42-4023	1790	136	175	P 32x6	P 32x6	Buck	31.2	L	FP	Non	Lon	Zen	V	A-L	A-L	D-B-L	B-L-35	U	4	Spl	Tim 55000H	Ros	108	78	78	78	6400
Gen. Mot. T42-4024	1790	136	175	P 32x6	P 32x6	Buck	31.2	L	FP	Non	Lon	Zen	V	A-L	A-L	D-B-L	B-L-35	U	4	Spl	Tim 55000H	Ros	108	78	78	78	6400
Gen. Mot. T42-4025	1790	136	175	P 32x6	P 32x6	Buck	31.2	L	FP	Non	Lon	Zen	V	A-L	A-L	D-B-L	B-L-35	U	4	Spl	Tim 55000H	Ros	108	78	78	78	6400
Gen. Mot. T42-4026	1790	136	175	P 32x6	P 32x6	Buck	31.2	L	FP	Non	Lon	Zen	V	A-L	A-L	D-B-L	B-L-35	U	4	Spl	Tim 55000H	Ros	108	78	78	78	6400
Gen. Mot. T42-4027	1790	136	175	P 32x6	P 32x6	Buck	31.2	L	FP	Non	Lon	Zen	V	A-L	A-L	D-B-L	B-L-35	U	4	Spl	Tim 55000H	Ros	108	78	78	78	6400
Gen. Mot. T42-4028	1790	136	175	P 32x6	P 32x6	Buck	31.2	L	FP	Non	Lon	Zen	V	A-L	A-L	D-B-L	B-L-35	U	4	Spl	Tim 55000H	Ros	108	78	78	78	6400
Gen. Mot. T42-4029	1790	136	175	P 32x6	P 32x6	Buck	31.2	L	FP	Non	Lon	Zen	V	A-L	A-L	D-B-L	B-L-35	U	4	Spl	Tim 55000H	Ros	108	78	78	78	6400
Gen. Mot. T42-4030	1790	136	175	P 32x6	P 32x6	Buck	31.2	L	FP	Non	Lon	Zen	V	A-L	A-L	D-B-L	B-L-35	U	4	Spl	Tim 55000H	Ros	108	78	78	78	6400
Gen. Mot. T42-4031	1790	136	175	P 32x6	P 32x6	Buck	31.2	L	FP	Non	Lon	Zen	V	A-L	A-L	D-B-L	B-L-35	U	4	Spl	Tim 55000H	Ros	108	78	78	78	6400
Gen. Mot. T42-4032	1790	136	175	P 32x6	P 32x6	Buck	31.2	L	FP	Non	Lon	Zen	V	A-L	A-L	D-B-L	B-L-35	U	4	Spl	Tim 55000H	Ros	108	78	78	78	6400
Gen. Mot. T42-4033	1790	136	175	P 32x6	P 32x6	Buck	31.2	L	FP	Non	Lon	Zen	V	A-L	A-L	D-B-L	B-L-35	U	4	Spl	Tim 55000H	Ros	108	78	78	78	6400
Gen. Mot. T42-4034	1790	136	175	P 32x6	P 32x6	Buck	31.2	L	FP	Non	Lon	Zen	V	A-L	A-L	D-B-L	B-L-35	U	4	Spl	Tim 55000H	Ros	108	78	78	78	6400
Gen. Mot. T42-4035	1790	136	175	P 32x6	P 32x6	Buck	31.2	L	FP	Non	Lon	Zen	V	A-L	A-L	D-B-L	B-L-35	U	4	Spl	Tim 55000H	Ros	108	78	78	78	6400
Gen. Mot. T42-4036	1790	136	175	P 32x6	P 32x6	Buck	31.2	L	FP	Non	Lon	Zen	V	A-L	A-L	D-B-L	B-L-35	U	4	Spl	Tim 55000H	Ros	108	78	78	78	



	P 30x5	DP30x5	Con	
203	P 34x7	DP34x7	Bud DW6	0-3 1/4x5
				0-3 3/8x4
				21.3
				33.7 L
				PC

Trade Name and Model	General				Engine				Electrical System		Clutch	Gearset		Rear Axle		Gear Ratios		Front Axle Make and Model	Steering Gear (Make)	Standard Wheelbase									
	Chassis Price	Tire Size		Bore and Stroke	N.A.C.C. Rated H.P.	Valve Arrangement	Oiling System	Governor (Make)	Radiator (Make)	Fuel System		Ignition System (Make)	Generator and Starter (Make)	Type and Make	Make and Model	Location	No. of Forward Speeds			Universals (Make)	Make and Model	Final Drive	Type	Total Reduction in High	Total Reduction in Low	Brakes, Location			
		Maximum Wheelbase	Standard Wheelbase							Front (inches)																	Rear (inches)	Carburetor (Make)	Fuel Feed
3 Ton—Cont'd																													
Federal U6...	165	165	P 34x7	DP34x7	Con 13R	6-4x4 1/2	38.4	PC	Pie	Lon	Str	V G	D-R	P B&B	Tim 65706HP	W	6.8	64.90	Ros	119	81 1/2	8.9	35.6	B	Own B				
F.W.D.B...	4200	124	S 36x6	DP36x6	Bud DW6	6-4x4 1/2	36.7	PC	Bud	McC	Str	V E	D-R	O-H-S	Own B	W	8.53	155.4	Woh	130	93	8.9	35.6	B	Own B				
Fresman DW 144...	4900	144	P 36x7	DP36x7	Bud BUS	6-4x4 1/2	33.7	PC	Pie	Lon	Str	V A	D-R	D. Ful	Tim 65706DH	W	8.53	155.4	Han	156	97 1/2	8.53	155.4	E	Tim 15733H				
Garford 60	4680	175	P 36x6	P 38x9	Bud BUS	6-3 1/2 x 4 1/2	26.3	PC	Han	Lon	Mar	O	D-R	D. B-L	Own	W	6.57	33.38	Jac	101	58	6.57	33.38	G	Own				
Gen. Mot. T42-4001	1885	136	P 32x6	DP32x6	Buick	6-3 1/2 x 4 1/2	26.3	PC	Han	Lon	Mar	O	D-R	D. B-L	Own	W	6.57	33.38	Jac	101	58	6.57	33.38	G	Own				
Gen. Mot. T42-4002	1790	136	P 32x6	DP32x6	Buick	6-3 1/2 x 4 1/2	26.3	PC	Han	Lon	Mar	O	D-R	D. B-L	Own	W	6.57	33.38	Jac	101	58	6.57	33.38	G	Own				
Gen. Mot. T42-4001	3215	140	P 36x8	DP36x8	Buick	6-3 1/2 x 4 1/2	31.5	PC	Han	Lon	Mar	O	D-R	D. B-L	Own	W	6.57	33.38	Jac	100	59	6.57	33.38	G	Own				
Gen. Mot. T42-4002	3160	140	P 36x8	DP36x8	Buick	6-3 1/2 x 4 1/2	31.5	PC	Han	Lon	Mar	O	D-R	D. B-L	Own	W	6.57	33.38	Jac	100	59	6.57	33.38	G	Own				
Gen. Mot. T42-4001	3215	140	P 36x8	DP36x8	Buick	6-3 1/2 x 4 1/2	31.5	PC	Han	Lon	Mar	O	D-R	D. B-L	Own	W	6.57	33.38	Jac	100	59	6.57	33.38	G	Own				
Gen. Mot. T42-4002	3160	140	P 36x8	DP36x8	Buick	6-3 1/2 x 4 1/2	31.5	PC	Han	Lon	Mar	O	D-R	D. B-L	Own	W	6.57	33.38	Jac	100	59	6.57	33.38	G	Own				
Godfredson RW-54	2890	140	P 36x8	DP36x8	Buick	6-3 1/2 x 4 1/2	31.5	PC	Han	Lon	Mar	O	D-R	D. B-L	Own	W	6.57	33.38	Jac	100	59	6.57	33.38	G	Own				
Godfredson RB-56	163	163	P 34x7	DP34x7	Own	6-4x4 1/2	38.4	PC	Pie	McC	Str	V A	D-R	D. B-L	Own	W	6.57	33.38	Jac	100	59	6.57	33.38	G	Own				
Godfredson RW-56	167	208	P 34x7	DP34x7	Own	6-4x4 1/2	38.4	PC	Pie	McC	Str	V A	D-R	D. B-L	Own	W	6.57	33.38	Jac	100	59	6.57	33.38	G	Own				
G-P 52-6	170	277	P 34x7	DP34x7	Loye TS	6-4x4 1/2	38.4	PC	Pie	McC	Str	V A	D-R	D. B-L	Own	W	6.57	33.38	Jac	100	59	6.57	33.38	G	Own				
G-P 54-8	167	208	P 34x7	DP34x7	Loye TS	6-4x4 1/2	38.4	PC	Pie	McC	Str	V A	D-R	D. B-L	Own	W	6.57	33.38	Jac	100	59	6.57	33.38	G	Own				
G-P 54-8	170	277	P 34x7	DP34x7	Loye TS	6-4x4 1/2	38.4	PC	Pie	McC	Str	V A	D-R	D. B-L	Own	W	6.57	33.38	Jac	100	59	6.57	33.38	G	Own				
G-P 54-8	167	208	P 34x7	DP34x7	Loye TS	6-4x4 1/2	38.4	PC	Pie	McC	Str	V A	D-R	D. B-L	Own	W	6.57	33.38	Jac	100	59	6.57	33.38	G	Own				
G-P 54-8	170	277	P 34x7	DP34x7	Loye TS	6-4x4 1/2	38.4	PC	Pie	McC	Str	V A	D-R	D. B-L	Own	W	6.57	33.38	Jac	100	59	6.57	33.38	G	Own				
G-P 54-8	167	208	P 34x7	DP34x7	Loye TS	6-4x4 1/2	38.4	PC	Pie	McC	Str	V A	D-R	D. B-L	Own	W	6.57	33.38	Jac	100	59	6.57	33.38	G	Own				
G-P 54-8	170	277	P 34x7	DP34x7	Loye TS	6-4x4 1/2	38.4	PC	Pie	McC	Str	V A	D-R	D. B-L	Own	W	6.57	33.38	Jac	100	59	6.57	33.38	G	Own				
G-P 54-8	167	208	P 34x7	DP34x7	Loye TS	6-4x4 1/2	38.4	PC	Pie	McC	Str	V A	D-R	D. B-L	Own	W	6.57	33.38	Jac	100	59	6.57	33.38	G	Own				
G-P 54-8	170	277	P 34x7	DP34x7	Loye TS	6-4x4 1/2	38.4	PC	Pie	McC	Str	V A	D-R	D. B-L	Own	W	6.57	33.38	Jac	100	59	6.57	33.38	G	Own				
G-P 54-8	167	208	P 34x7	DP34x7	Loye TS	6-4x4 1/2	38.4	PC	Pie	McC	Str	V A	D-R	D. B-L	Own	W	6.57	33.38	Jac	100	59	6.57	33.38	G	Own				
G-P 54-8	170	277	P 34x7	DP34x7	Loye TS	6-4x4 1/2	38.4	PC	Pie	McC	Str	V A	D-R	D. B-L	Own	W	6.57	33.38	Jac	100	59	6.57	33.38	G	Own				
G-P 54-8	167	208	P 34x7	DP34x7	Loye TS	6-4x4 1/2	38.4	PC	Pie	McC	Str	V A	D-R	D. B-L	Own	W	6.57	33.38	Jac	100	59	6.57	33.38	G	Own				
G-P 54-8	170	277	P 34x7	DP34x7	Loye TS	6-4x4 1/2	38.4	PC	Pie	McC	Str	V A	D-R	D. B-L	Own	W	6.57	33.38	Jac	100	59	6.57	33.38	G	Own				
G-P 54-8	167	208	P 34x7	DP34x7	Loye TS	6-4x4 1/2	38.4	PC	Pie	McC	Str	V A	D-R	D. B-L	Own	W	6.57	33.38	Jac	100	59	6.57	33.38	G	Own				
G-P 54-8	170	277	P 34x7	DP34x7	Loye TS	6-4x4 1/2	38.4	PC	Pie	McC	Str	V A	D-R	D. B-L	Own	W	6.57	33.38	Jac	100	59	6.57	33.38	G	Own				
G-P 54-8	167	208	P 34x7	DP34x7	Loye TS	6-4x4 1/2	38.4	PC	Pie	McC	Str	V A	D-R	D. B-L	Own	W	6.57	33.38	Jac	100	59	6.57	33.38	G	Own				
G-P 54-8	170	277	P 34x7	DP34x7	Loye TS	6-4x4 1/2	38.4	PC	Pie	McC	Str	V A	D-R	D. B-L	Own	W	6.57	33.38	Jac	100	59	6.57	33.38	G	Own				
G-P 54-8	167	208	P 34x7	DP34x7	Loye TS	6-4x4 1/2	38.4	PC	Pie	McC	Str	V A	D-R	D. B-L	Own	W	6.57	33.38	Jac	100	59	6.57	33.38	G	Own				
G-P 54-8	170	277	P 34x7	DP34x7	Loye TS	6-4x4 1/2	38.4	PC	Pie	McC	Str	V A	D-R	D. B-L	Own	W	6.57	33.38	Jac	100	59	6.57	33.38	G	Own				
G-P 54-8	167	208	P 34x7	DP34x7	Loye TS	6-4x4 1/2	38.4	PC	Pie	McC	Str	V A	D-R	D. B-L	Own	W	6.57	33.38	Jac	100	59	6.57	33.38	G	Own				
G-P 54-8	170	277	P 34x7	DP34x7	Loye TS	6-4x4 1/2	38.4	PC	Pie	McC	Str	V A	D-R	D. B-L	Own	W	6.57	33.38	Jac	100	59	6.57	33.38	G	Own				
G-P 54-8	167	208	P 34x7	DP34x7	Loye TS	6-4x4 1/2	38.4	PC	Pie	McC	Str	V A	D-R	D. B-L	Own	W	6.57	33.38	Jac	100	59	6.57	33.38	G	Own				
G-P 54-8	170	277	P 34x7	DP34x7	Loye TS	6-4x4 1/2	38.4	PC	Pie	McC	Str	V A	D-R	D. B-L	Own	W	6.57	33.38	Jac	100	59	6.57	33.38	G	Own				
G-P 54-8	167	208	P 34x7	DP34x7	Loye TS	6-4x4 1/2	38.4	PC	Pie	McC	Str	V A	D-R	D. B-L	Own	W	6.57	33.38	Jac	100	59	6.57	33.38	G	Own				
G-P 54-8	170	277	P 34x7	DP34x7	Loye TS	6-4x4 1/2	38.4	PC	Pie	McC	Str	V A	D-R	D. B-L	Own	W	6.57	33.38	Jac	100	59	6.57	33.38	G	Own				
G-P 54-8	167	208	P 34x7	DP34x7	Loye TS	6-4x4 1/2	38.4	PC	Pie	McC	Str	V A	D-R	D. B-L	Own	W	6.57	33.38	Jac	100	59	6.57	33.38	G	Own				
G-P 54-8	170	277	P 34x7	DP34x7	Loye TS	6-4x4 1/2	38.4	PC	Pie	McC	Str	V A	D-R	D. B-L	Own	W	6.57	33.38	Jac	100	59	6.57	33.38	G	Own				
G-P 54-8	167	208	P 34x7	DP34x7	Loye TS	6-4x4 1/2	38.4	PC	Pie	McC	Str	V A	D-R	D. B-L	Own	W	6.57	33.38	Jac	100	59	6.57	33.38	G	Own				
G-P 54-8	170	277	P 34x7	DP34x7	Loye TS	6-4x4 1/2	38.4	PC	Pie	McC	Str	V A	D-R	D. B-L	Own	W	6.57	33.38	Jac	100	59	6.57	33.38	G	Own				
G-P 54-8	167	208	P 34x7	DP34x7	Loye TS	6-4x4 1/2	38.4	PC	Pie	McC	Str	V A	D-R	D. B-L	Own	W	6.57	33.38	Jac	100	59	6.57	33.38	G	Own				
G-P 54-8	170	277	P 34x7	DP34x7	Loye TS	6-4x4 1/2	38.4	PC	Pie	McC	Str	V A	D-R	D. B-L	Own	W	6.57	33.38	Jac	100	59	6.57	33.38	G	Own				
G-P 54-8	167	208	P 34x7	DP34x7	Loye TS	6-4x4 1/2	38.4	PC	Pie	McC	Str	V A	D-R	D. B-L	Own	W	6.57	33.38	Jac	100	59	6.57	33.38	G	Own				
G-P 54-8	170	277	P 34x7	DP34x7	Loye TS	6-4x4 1/2	38.4	PC	Pie	McC	Str	V A	D-R	D. B-L	Own	W	6.57	33.38	Jac	100	59	6.57	33.38	G	Own				
G-P 54-8	167	208	P 34x7	DP34x7	Loye TS	6-4x4 1/2	38.4	PC	Pie	McC	Str	V A	D-R	D. B-L	Own	W	6.57	33.38	Jac	100	59	6.57	33.38	G	Own				
G-P 54-8	170	277	P 34x7	DP34x7	Loye TS	6-4x4 1/2	38.4	PC	Pie	McC	Str	V A	D-R	D. B-L	Own	W	6.57	33.38	Jac	100	59	6.57	33.38	G	Own				
G-P 54-8	167	208	P 34x7	DP34x7	Loye TS	6-4x4 1/2	38.4	PC	Pie	McC	Str	V A	D-R	D. B-L	Own	W	6.57	33.38	Jac	100	59	6.57	33.38	G	Own				
G-P 54-8	170	277	P 34x7	DP34x7	Loye TS	6-4x4 1/2	38.4	PC	Pie	McC	Str	V A	D-R	D. B-L	Own	W	6.57	33.38	Jac	100	59	6.57	33.38	G	Own				
G-P 54-8	167	208	P 34x7	DP34x7	Loye TS	6-4x4 1/2	38.4	PC	Pie	McC	Str	V A	D-R	D. B-L	Own	W	6.57	33.38	Jac	100	59	6.57	33.38	G	Own				
G-P 54-8	170	277	P 34x7	DP34x7	Loye TS	6-4x4 1/2	38.4	PC	Pie	McC	Str	V A	D-R	D. B-L	Own	W	6.57	33.38	Jac	100	59	6.57	33.38	G	Own				
G-P 54-8	167	208	P 34x7	DP34x7	Loye TS	6-4x4 1/2	38.4	PC	Pie	McC	Str	V A	D-R	D. B-L	Own	W	6.57	33.38	Jac	100	59	6.57	33.38	G	Own				
G-P 54-8	170	277	P 34x7	DP34x7	Loye TS	6-4x4 1/2	38.4	PC	Pie	McC	Str	V A	D-R	D. B-L	Own	W	6.57	33.38	Jac	100	59	6.57	33.38	G	Own				
G-P 54-8	167	208	P 34x7	DP34x7	Loye TS	6-4x4 1/2	38.4	PC	Pie	McC	Str	V A	D-R	D. B-L	Own	W	6.57	33.38	Jac	100	59	6.57	33.38	G	Own				
G-P 54-8	170	277	P 34x7	DP34x7	Loye TS	6-4x4 1/2	38.4	PC	Pie	McC	Str	V A	D-R	D. B-L	Own	W	6.57	33.38	Jac	100	59	6.57	33.38	G	Own				
G-P 54-8	167	208	P 34x7	DP34x7	Loye TS	6-4x4 1/2	38.4	PC	Pie	McC	Str	V A	D-R	D. B-L	Own	W	6.57												



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Trade Name and Model	General			Engine					Electrical System		Clutch	Gearset		Rear Axle	Gear Ratio		Front Axle Make and Model	Steering Gear (Make)	Standard Wheelbase												
	Chassis Price	Standard Wheelbase (inches)	Maximum Wheelbase (inches)	Tire Size	Make and Model	Number of Cylinders	N.A.C.C. Rated H.P.	Valve Arrangement	Oiling System	Governor (Make)		Radiator (Make)	Fuel System		Ignition System (Make)	Generator and Starter (Make)			Type and Make	Make and Model	Location	No. of Forward Speeds	Universal (Make)	Final Drive	Type	Total Reduction in High	Total Reduction in Low	Brakes, Location	Cab to rear of frame	Chassis Weight (lbs.)	
													Carburetor (Make)																		Fuel Feed
5 Ton—Cont'd																															
Oakleaf FXH	5475	146	165	S 36x8	Her YXC2	6-41/2x5 1/2	48.6 L	PC	PC	Her	Own	Str	Bas-R	D-R	D-B-L	B-L	A	7	Blo	Own FH	R	F	9.6	91.2	B*	Own FH	83 1/2%	9200			
Pierce-Arrow RD	5400	162	198	S 36x6	Wau DU	4-56x6 1/2	32.4 L	PC	PC	Wau	Own	Str	Bas-A	D-R	D-B-L	B-L	A	4	Spi	Own RD	W	F	10.25	54.4	B*	Own RD	123 1/2%	8750			
Rehberger D	3400	170	198	S 36x6	Wau DU	4-56x6 1/2	32.4 L	PC	PC	Wau	Own	Str	Bas-A	D-R	D-B-L	B-L	A	4	Spi	Own RD	W	F	10.25	54.4	B*	Own RD	123 1/2%	8750			
Rehberger 35	3400	170	198	S 36x6	Wau DU	4-56x6 1/2	32.4 L	PC	PC	Wau	Own	Str	Bas-A	D-R	D-B-L	B-L	A	4	Spi	Own RD	W	F	10.25	54.4	B*	Own RD	123 1/2%	8750			
Schuch 40	3400	170	198	S 36x8	Con 21R	6-41/2x5 1/2	45.9 L	PC	PC	Non	Own	Str	Bas-A	D-R	D-B-L	B-L	A	7	Blo	Wau 1500	R	F	10.8	95.0	G	Wau 1500	84%	9600			
Selden 67C	3400	170	198	S 36x8	Con 21R	6-41/2x5 1/2	45.9 L	PC	PC	Non	Own	Str	Bas-A	D-R	D-B-L	B-L	A	7	Blo	Wau 1500	R	F	10.8	95.0	G	Wau 1500	84%	9600			
Selden 67C	3400	170	198	S 36x8	Con 21R	6-41/2x5 1/2	45.9 L	PC	PC	Non	Own	Str	Bas-A	D-R	D-B-L	B-L	A	7	Blo	Wau 1500	R	F	10.8	95.0	G	Wau 1500	84%	9600			
Selden 67C	3400	170	198	S 36x8	Con 21R	6-41/2x5 1/2	45.9 L	PC	PC	Non	Own	Str	Bas-A	D-R	D-B-L	B-L	A	7	Blo	Wau 1500	R	F	10.8	95.0	G	Wau 1500	84%	9600			
Selden 67C	3400	170	198	S 36x8	Con 21R	6-41/2x5 1/2	45.9 L	PC	PC	Non	Own	Str	Bas-A	D-R	D-B-L	B-L	A	7	Blo	Wau 1500	R	F	10.8	95.0	G	Wau 1500	84%	9600			
Selden 67C	3400	170	198	S 36x8	Con 21R	6-41/2x5 1/2	45.9 L	PC	PC	Non	Own	Str	Bas-A	D-R	D-B-L	B-L	A	7	Blo	Wau 1500	R	F	10.8	95.0	G	Wau 1500	84%	9600			
Selden 67C	3400	170	198	S 36x8	Con 21R	6-41/2x5 1/2	45.9 L	PC	PC	Non	Own	Str	Bas-A	D-R	D-B-L	B-L	A	7	Blo	Wau 1500	R	F	10.8	95.0	G	Wau 1500	84%	9600			
Selden 67C	3400	170	198	S 36x8	Con 21R	6-41/2x5 1/2	45.9 L	PC	PC	Non	Own	Str	Bas-A	D-R	D-B-L	B-L	A	7	Blo	Wau 1500	R	F	10.8	95.0	G	Wau 1500	84%	9600			
Selden 67C	3400	170	198	S 36x8	Con 21R	6-41/2x5 1/2	45.9 L	PC	PC	Non	Own	Str	Bas-A	D-R	D-B-L	B-L	A	7	Blo	Wau 1500	R	F	10.8	95.0	G	Wau 1500	84%	9600			
Selden 67C	3400	170	198	S 36x8	Con 21R	6-41/2x5 1/2	45.9 L	PC	PC	Non	Own	Str	Bas-A	D-R	D-B-L	B-L	A	7	Blo	Wau 1500	R	F	10.8	95.0	G	Wau 1500	84%	9600			
Selden 67C	3400	170	198	S 36x8	Con 21R	6-41/2x5 1/2	45.9 L	PC	PC	Non	Own	Str	Bas-A	D-R	D-B-L	B-L	A	7	Blo	Wau 1500	R	F	10.8	95.0	G	Wau 1500	84%	9600			
Selden 67C	3400	170	198	S 36x8	Con 21R	6-41/2x5 1/2	45.9 L	PC	PC	Non	Own	Str	Bas-A	D-R	D-B-L	B-L	A	7	Blo	Wau 1500	R	F	10.8	95.0	G	Wau 1500	84%	9600			
Selden 67C	3400	170	198	S 36x8	Con 21R	6-41/2x5 1/2	45.9 L	PC	PC	Non	Own	Str	Bas-A	D-R	D-B-L	B-L	A	7	Blo	Wau 1500	R	F	10.8	95.0	G	Wau 1500	84%	9600			
Selden 67C	3400	170	198	S 36x8	Con 21R	6-41/2x5 1/2	45.9 L	PC	PC	Non	Own	Str	Bas-A	D-R	D-B-L	B-L	A	7	Blo	Wau 1500	R	F	10.8	95.0	G	Wau 1500	84%	9600			
Selden 67C	3400	170	198	S 36x8	Con 21R	6-41/2x5 1/2	45.9 L	PC	PC	Non	Own	Str	Bas-A	D-R	D-B-L	B-L	A	7	Blo	Wau 1500	R	F	10.8	95.0	G	Wau 1500	84%	9600			
Selden 67C	3400	170	198	S 36x8	Con 21R	6-41/2x5 1/2	45.9 L	PC	PC	Non	Own	Str	Bas-A	D-R	D-B-L	B-L	A	7	Blo	Wau 1500	R	F	10.8	95.0	G	Wau 1500	84%	9600			
Selden 67C	3400	170	198	S 36x8	Con 21R	6-41/2x5 1/2	45.9 L	PC	PC	Non	Own	Str	Bas-A	D-R	D-B-L	B-L	A	7	Blo	Wau 1500	R	F	10.8	95.0	G	Wau 1500	84%	9600			
Selden 67C	3400	170	198	S 36x8	Con 21R	6-41/2x5 1/2	45.9 L	PC	PC	Non	Own	Str	Bas-A	D-R	D-B-L	B-L	A	7	Blo	Wau 1500	R	F	10.8	95.0	G	Wau 1500	84%	9600			
Selden 67C	3400	170	198	S 36x8	Con 21R	6-41/2x5 1/2	45.9 L	PC	PC	Non	Own	Str	Bas-A	D-R	D-B-L	B-L	A	7	Blo	Wau 1500	R	F	10.8	95.0	G	Wau 1500	84%	9600			
Selden 67C	3400	170	198	S 36x8	Con 21R	6-41/2x5 1/2	45.9 L	PC	PC	Non	Own	Str	Bas-A	D-R	D-B-L	B-L	A	7	Blo	Wau 1500	R	F	10.8	95.0	G	Wau 1500	84%	9600			
Selden 67C	3400	170	198	S 36x8	Con 21R	6-41/2x5 1/2	45.9 L	PC	PC	Non	Own	Str	Bas-A	D-R	D-B-L	B-L	A	7	Blo	Wau 1500	R	F	10.8	95.0	G	Wau 1500	84%	9600			
Selden 67C	3400	170	198	S 36x8	Con 21R	6-41/2x5 1/2	45.9 L	PC	PC	Non	Own	Str	Bas-A	D-R	D-B-L	B-L	A	7	Blo	Wau 1500	R	F	10.8	95.0	G	Wau 1500	84%	9600			
Selden 67C	3400	170	198	S 36x8	Con 21R	6-41/2x5 1/2	45.9 L	PC	PC	Non	Own	Str	Bas-A	D-R	D-B-L	B-L	A	7	Blo	Wau 1500	R	F	10.8	95.0	G	Wau 1500	84%	9600			
Selden 67C	3400	170	198	S 36x8	Con 21R	6-41/2x5 1/2	45.9 L	PC	PC	Non	Own	Str	Bas-A	D-R	D-B-L	B-L	A	7	Blo	Wau 1500	R	F	10.8	95.0	G	Wau 1500	84%	9600			
Selden 67C	3400	170	198	S 36x8	Con 21R	6-41/2x5 1/2	45.9 L	PC	PC	Non	Own	Str	Bas-A	D-R	D-B-L	B-L	A	7	Blo	Wau 1500	R	F	10.8	95.0	G	Wau 1500	84%	9600			
Selden 67C	3400	170	198	S 36x8	Con 21R	6-41/2x5 1/2	45.9 L	PC	PC	Non	Own	Str	Bas-A	D-R	D-B-L	B-L	A	7	Blo	Wau 1500	R	F	10.8	95.0	G	Wau 1500	84%	9600			
Selden 67C	3400	170	198	S 36x8	Con 21R	6-41/2x5 1/2	45.9 L	PC	PC	Non	Own	Str	Bas-A	D-R	D-B-L	B-L	A	7	Blo	Wau 1500	R	F	10.8	95.0	G	Wau 1500	84%	9600			
Selden 67C	3400	170	198	S 36x8	Con 21R	6-41/2x5 1/2	45.9 L	PC	PC	Non	Own	Str	Bas-A	D-R	D-B-L	B-L	A	7	Blo	Wau 1500	R	F	10.8	95.0	G	Wau 1500	84%	9600			
Selden 67C	3400	170	198	S 36x8	Con 21R	6-41/2x5 1/2	45.9 L	PC	PC	Non	Own	Str	Bas-A	D-R	D-B-L	B-L	A	7	Blo	Wau 1500	R	F	10.8	95.0	G	Wau 1500	84%	9600			
Selden 67C	3400	170	198	S 36x8	Con 21R	6-41/2x5 1/2	45.9 L	PC	PC	Non	Own	Str	Bas-A	D-R	D-B-L	B-L	A	7	Blo	Wau 1500	R	F	10.8	95.0	G	Wau 1500	84%	9600			
Selden 67C	3400	170	198	S 36x8	Con 21R	6-41/2x5 1/2	45.9 L	PC	PC	Non	Own	Str	Bas-A	D-R	D-B-L	B-L	A	7	Blo	Wau 1500	R	F	10.8	95.0	G	Wau 1500	84%	9600			
Selden 67C	3400	170	198	S 36x8	Con 21R	6-41/2x5 1/2	45.9 L	PC	PC	Non	Own	Str	Bas-A	D-R	D-B-L	B-L	A	7	Blo	Wau 1500	R	F	10.8	95.0	G	Wau 1500	84%	9600			
Selden 67C	3400	170	198	S 36x8	Con 21R	6-41/2x5 1/2	45.9 L	PC	PC	Non	Own	Str	Bas-A	D-R	D-B-L	B-L	A	7	Blo	Wau 1500	R	F	10.8	95.0	G	Wau 1500	84%	9600			
Selden 67C	3400	170	198	S 36x8	Con 21R	6-41/2x5 1/2	45.9 L	PC	PC	Non	Own	Str	Bas-A	D-R	D-B-L	B-L	A	7	Blo	Wau 1500	R	F	10.8	95.0	G	Wau 1500	84%	9600			
Selden 67C	3400	170	198	S 36x8	Con 21R	6-41/2x5 1/2	45.9 L	PC	PC	Non	Own	Str	Bas-A	D-R	D-B-L	B-L	A	7	Blo	Wau 1500	R	F	10.8	95.0	G	Wau 1500	84%	9600			
Selden 67C	3400	170	198	S 36x8	Con 21R	6-41/2x5 1/2	45.9 L	PC	PC	Non	Own	Str	Bas-A	D-R	D-B-L	B-L	A	7	Blo	Wau 1500	R	F	10.8	95.0	G	Wau 1500	84%	9600			
Selden 67C	3400	170	198	S 36x8	Con 21R	6-41/2x5 1/2	45.9 L	PC	PC	Non	Own	Str	Bas-A	D-R	D-B-L	B-L	A	7	Blo	Wau 1500	R	F	10.8	95.0	G	Wau 1500	84%	9600			
Selden 67C	3400	170	198	S 36x8	Con 21R	6-41/2x5 1/2	45.9 L	PC	PC	Non	Own	Str	Bas-A	D-R	D-B-L	B-L	A	7	Blo	Wau 1500	R	F	10.8	95.0	G	Wau 1500	84%	9600			
Selden 67C	3400	170	198	S 36x8	Con 21R	6-41/2x5 1/2	45.9 L	PC	PC	Non	Own	Str	Bas-A	D-R	D-B-L	B-L	A	7	Blo	Wau 1500	R	F	10.8	95.0	G	Wau 1500	84%	9600			
Selden 67C	3400	170	198	S 36x8	Con 21R	6-41/2x5 1/2	45.9 L	PC	PC	Non	Own	Str	Bas-A	D-R	D-B-L	B-L	A	7	Blo	Wau 1500	R	F	10.8	95.0	G	Wau 1500	84%</				



Model	Price	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398	2399	2400	2401	2402	2403	2404	2405	2406	2407	2408	2409	2410	2411	2412	2413	2414	2415	2416	2417	2418	2419	2420	2421	2422	2423	2424	2425	2426	2427	2428	2429	2430	2431	2432	2433	2434	2435	2436	2437	2438	2439	2440	2441	2442	2443	2444	2445	2446	2447	2448	2449	2450	2451	2452	2453	2454	2455	2456	2457	2458	2459	2460	2461	2462	2463	2464	2465	2466	2467	2468	2469	2470	2471	2472	2473	2474	2475	2476	2477	2478	2479	2480	2481	2482	2483	2484	2485	2486	2487	2488	2489	2490	2491	2492	2493	2494	2495	2496	2497	2498	2499	2500	2501	2502	2503	2504	2505	2506	2507	2508	2509	2510	2511	2512	2513	2514	2515	2516	2517	2518	2519	2520	2521	2522	2523	2524	2525	2526	2527	2528	2529	2530	2531	2532	2533	2534	2535	2536	2537	2538	2539	2540	2541	2542	2543	2544	2545	2546	2547	2548	2549	2550	2551	2552	2553	2554	2555	2556	2557	2558	2559	2560	2561	2562	2563	2564	2565	2566	2567	2568	2569	2570	2571	2572	2573	2574	2575	2576	2577	2578	2579	2580	2581	2582	2583	2584	2585	2586	2587	2588	2589	2590	2591	2592	2593	2594	2595	2596	2597	2598	2599	2600	2601	2602	2603	2604	2605	2606	2607	2608	2609	2610	2611	2612	2613	2614	2615	2616	2617	2618	2619	2620	2621	2622	2623	2624	2625	2626	2627	2628	2629	2630	2631	2632	2633	2634	2635	2636	2637	2638	2639	2640	2641	2642	2643	2644	2645	2646	2647	2648	2649	2650	2651	2652	2653	2654	2655	2656	2657	2658	2659	2660	2661	2662	2663	2664	2665	2666	2667	2668	2669	2670	2671	2672	2673	2674	2675	2676	2677	2678	2679	2680	2681	2682	2683	2684	2685	2686	2687	2688	2689	2690	2691	2692	2693	2694	2695	2696	2697	2698	2699	2700	2701	2702	2703	2704	2705	2706	2707	2708	2709	2710	2711	2712	2713	2714	2715	2716	2717	2718	2719	2720	2721	2722	2723	2724	2725	2726	2727	2728	2729	2730	2731	2732	2733	2734	2735	2736	2737	2738	2739	2740	2741	2742	2743	2744	2745	2746	2747	2748	2749	2750	2751	2752	2753	2754	2755	2756	2757	2758	2759	2760	2761	2762	2763	2764	2765	2766	2767	2768	2769	2770	2771	2772	2773	2774	2775	2776	2777	2778	2779	2780	2781	2782	2783	2784	2785	2786	2787	2788	2789	2790	2791	2792	2793	2794	2795	2796	2797	2798	2799	2800	2801	2802	2803	2804	2805	2806	2807	2808	2809	2810	2811	2812	2813	2814	2815	2816	2817	2818	2819	2820	2821	2822	2823	2824	2825	2826	2827	2828	2829	2830	2831	2832	2833	2834	2835	2836	2837	2838	2839	2840	2841	2842	2843	2844	2845	2846	2847	2848	2849	2850	2851	2852	2853	2854	2855	2856	2857	2858	2859	2860	2861	2862	2863	2864	2865	2866	2867	2868	2869	2870	2871	2872	2873	2874	2875	2876	2877	2878	2879	2880	2881	2882	2883	2884	2885	2886	2887	2888	2889	2890	2891	2892	2893	2894	2895	2896	2897	2898	2899	2900	2901	2902	2903	2904	2905	2906	2907	2908	2909	2910	2911	2912	2913	2914	2915	2916	2917	2918	2919	2920	2921	2922	2923	2924	2925	292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Trade Name and Model	General				Engine							Electrical System		Clutch	Gearset		Universal (Make)	Rear Axle		Gear Ratio		Front Axle Make and Model	Steering Gear (Make)	Standard Wheelbase				
	Chassis Price	Standard Wheelbase (Inches)	Tire Size		Make and Model	Number of Cylinders	N.A.C. Rated H.P.	Valve Arrangement	Oiling System	Governor (Make)	Radiator (Make)	Fuel System			Ignition System (Make)	Generator and Starter (Make)		Type and Make	Make and Model	Location	No. of Forward Speeds			Type	Total Reduction in High	Total Reduction in Low	Brakes, Location	Cab to rear of frame
			Maximum Wheelbase	Furnished								Front (Inches)	Rear (Inches)	Carburetor (Make)			Fuel Feed											
Oneida SFF-15	Opt.	140	P 38x9	S 38x9	Wau 6AB	6-41x5 1/2	48.8	PC	Wau	Per	Str	V	A-L	A-L	A-L	B-L	B-L 60	A	7 Blo	W 16	10.25	96.35	G*	Tm 16302	Ros	Opt.	10850	
Pierce-Arrow XB	3750	140	S 38x5	S 38x5	Own XB	4-43x5 3/4	25.6	FP	FP	Own	Str	D	D	D-R	D-R	D-R	D. Own	Own XB	A	4 Spi	W 16	19.25	50.2	A*	Own	Own	6160	
Pierce-Arrow RD	5400	133	S 38x6	S 38x6	Own RD	4-41x5 5/8	32.4	T	FP	Own	Str	D	D	D-R	D-R	D-R	D. Own	Own RF	A	4 Spi	W 16	7.8	41.3	B*	Own	Own	8650	
Pierce-Arrow RF	5900	132	S 38x6	S 38x6	Own RF	4-41x5 5/8	32.4	FP	FP	Own	Str	D	D	D-R	D-R	D-R	D. Own	Own RF	A	4 Spi	W 16	10.0	51.9	B*	Own	Own	9340	
Relay 40	3240	138	P 38x6	DP 38x6	Bud BUS	6-38x5	38.4	PC	Non	Own	Zen	V	A-L	A-L	A-L	B-L 51	B-L 51	U	5 Blo	R R	R F	6.45	34.3	G	Tm 14704H	Han	5300	
Relay 60	4480	142	P 38x6	DP 38x6	Bud BUS	6-38x5	38.4	PC	Non	Own	Zen	V	A-L	A-L	A-L	B-L 51	B-L 51	U	5 Blo	R R	R F	6.45	34.3	G	Tm 1573H	Han	5350	
Schacht 5 Ton.	130	S 38x5	S 38x12	S 38x12	Wau XK	6-34x4 1/2	33.7	PC	.....	Own	Zen	G	L-N	L-N	L-N	B-L 51	B-L 51	U	4 Spi	R R	R F	9.42	45.22	G	Tm 1573H	Han	7500	
Schacht 7 Ton.	130	S 38x5	S 38x12	S 38x12	Wau XK	6-34x4 1/2	33.7	PC	.....	Own	Zen	G	L-N	L-N	L-N	B-L 51	B-L 51	U	4 Spi	R R	R F	9.42	45.22	G	Tm 1573H	Han	7500	
Schacht 13 Ton.	130	S 38x5	S 38x12	S 38x12	Wau XK	6-34x4 1/2	33.7	PC	.....	Own	Zen	G	L-N	L-N	L-N	B-L 51	B-L 51	U	4 Spi	R R	R F	9.42	45.22	G	Tm 1573H	Han	7500	
Schacht 15 Ton.	130	S 38x7	DS40x7	DS40x7	Wau SRL	6-43x5 1/2	45.9	PC	.....	Own	Zen	G	L-N	L-N	L-N	B-L 51	B-L 51	U	4 Spi	R R	R F	9.42	45.22	G	Tm 1573H	Han	10000	
Walter FK	6100	Opt	P 40x8	P 40x8	Wau SRL	6-43x5 1/2	45.9	PC	.....	Own	Zen	G	L-N	L-N	L-N	B-L 51	B-L 51	U	4 Spi	R R	R F	9.42	45.22	G	Tm 1573H	Han	10000	
Walter FH	7600	Opt	P 40x8	P 40x8	Own 6	6-41x4 1/2	48.4	PC	Own	Own	Zen	V	Eis	D-R	D-R	B-L 51	B-L 51	U	5 Spi	R R	R D	8.50	85.0	E*	Own	Ros	7500	
Walter FHR	7600	Opt	P 40x8	P 40x8	Own 6	6-41x4 1/2	48.4	PC	Own	Own	Zen	V	Eis	D-R	D-R	B-L 51	B-L 51	U	5 Spi	R R	R D	8.50	85.0	E*	Own	Ros	9000	
White 52T	4700	129 1/2	S 38x5 1/2	DS40x5	Own GRB	6-41x5 1/2	48.6	PC	Own	Own	Zen	V	Eis	D-R	D-R	B-L 51	B-L 51	U	5 Spi	R R	R D	8.50	85.0	E*	Own	Ros	9600	
White 51A	3875	134	S 38x5 1/2	DS40x5	Own GRB	6-41x5 1/2	28.9	FP	Own	Own	Zen	V	.....	L-N†	L-N†	P. Own	Own 4B	U	4 Spi	S	S	11.7	76.5	B*	Own	Own	8236	
																											6045	

## KEY OF ABBREVIATIONS

**For addresses of manufacturers listed below see Chilton Catalog and Directory**

### Wheelbase

**Var—Varies with Wheelbase finished.**

## Tires

B-Balloon.  
P-Pneumatics standard equip-  
DP-Dual pneumatics standard  
equipment.  
S-Solids.  
DS-Dual solids.  
\* -Tires at extra cost.  
† -Pneumatics can be furnished  
at extra cost.

## Engine

\*Models also furnished with engine under seat.

Bud-Buda Co.  
Con-Continental M. Corp.  
D-Head and Side.  
F-Full Pressure to all bearings.  
G-Pressing wrist pins.  
H-Overhead.  
H-HAS-American Car & Fdy. Co.  
H-Her-Hercules Motor Corp.  
I-In Head.  
J-Jackson-Master M. T. Mfg. Co.  
J-J-L-Head.  
K-King-Clymer M. Corp.  
P-C-Pre-lubricated to all crankshaft and connecting rod bearings.  
P-G-Pump, Gravity & Splash.  
P-P-Pressure with splash.  
S-S-Circulating splash.  
T-T-Head.  
Wau-Waukesha M. Co.  
Wis-Wisconsin M. Mfg. Co.  
X-X-Yellow Sleeve V. E. Wks.  
Y-Yellow Sleeve.

Ste—Detroit Lubricator Co.  
Str—Stromberg Motor Dev. Co.  
Til—Tillotson Mfg. Co.  
V—Vacuum.  
Zen—Zenith-Detroit Corp.

## Electrical Systems

†-Generator & Starter at Extra Cost.  
 †-Starter not supplied, Generator at Extra Cost.  
 †-Starter at Extra Cost.  
 A-L-Electric Auto-Life Corp.  
 Apo-Apollo Magneto Corp.  
 Bos-R. Bosch Magneto Co.  
 Bos-R. Bosch Magneto Co.  
 C. Con. Tel. & Elec. Co.  
 D. Delco-Elec. Co.  
 D-R-Delco-Remy Co.  
 Dyn-Owen Dyneto Corp.  
 Eds-Eisemann Magneto Corp.  
 Gor-R. J. Gorman Co., Inc.  
 L-N-Leece-Neville Co., Inc.  
 N-E-North East Elect. Co.  
 Non-Not Supplied.  
 Sci-Scintilla Magneto Co.  
 Spl-Splitdorf Electrical Co.

## Clutch and Gearset

\*—Other ratios optional.  
—Auxiliary two-speed mission optional.

A—Amidsips,  
B & B—Borg & Beck Co.  
B-L—Brown-Lipe Gear Co.  
Cot-Cotta Trans. Corp.  
Cov—Covert Gear Co.  
Det-A. J. Detlaff Co.  
D-C—Detroit Gear & Mach. Co.  
D-Disk.  
Ful-Fuller & Sons Mfg. Co.  
H-S—Merchant & Evans Co.

J—Unit with Jackshaft.  
Lon—Long Mfg. Co.  
M. M.—Mechanics Mach. Co. Div.  
Mun—Muncie Products  
General Motors Corp.

## On.

Roc—Rockford Drill, Mach. Co.  
U—Unit with Engine.  
W-G—Warner Gear Co.  
Yell—Yellow Sleeve V. E. Wks.

## Universal

B.G.—Universal Machine Co.  
 Blo—Blood Bros. Mach. Co.  
 Cle—Cleveland St. Prod. Corp.  
 Har—Spicer Mfg. Co.  
 M-E—Merchant & Evans Co.  
 M. M.—Mechanics Machine Co.  
 Net—Cleveland Univ. Farts Co.  
 P—Plick Mfg. Co.  
 Spl—Spicer Mfg. Co.  
 Sp-B—Spiegel and Blood Bros.  
 T—Thermoid Rubber Co.  
 TSp—Thermoid & Spicer  
 U-M—Universal Machine Co.  
 U-P—Universal Products Co.

### Front and Rear Axles

• Two speed  
 1/2 Three-Quarter Floating.  
 B-Straight Bevel  
 C-Clark Equip. Co.  
 Col-Columbia Axle Co.  
 Con-Continental Axle Co.  
 C-Chain.  
 D-Dead.  
 Eat-Eaton Axle Co.  
 F-Floating.  
 I-Internal Gear.  
 R-Double Reduction.  
 S-Spiral Bevel.

Sal-Salisbury Axle Co. Inc.  
Shu-Shuler Axle Co.  
Tim-Timken Det. Axle Co.  
Tor-Eaton Axle & Spring Co.  
Vul-Vulcan Steam Forging Co.  
W-Worm.  
Wis-Wisconsin Axle Co.

## Brake

**A—Rear Wheels only.**  
**B—Driveshaft and Rear Wheels.**  
**D—Jackshaft and Rear Wheels.**  
**E—4-Wheel Brakes.**  
**F—4-Wheel Brakes with emergency on jackshaft.**  
**G—4-Wheel Brakes with emergency on driveshaft.**  
**H—4-Wheel Brakes with emergency on rear wheels.**  
**I—4-Wheel Brakes with emergency on propeller shaft.**  
**J—Driveshaft.**  
**K—Service & Emergency Brakes on four wheels.**

## Service Brake Type

**Mechanical.**  
—Hydraulic.  
—Vacuum  
Compressed Air.

## Steering Gear

CAS—Columbus G. & P. Co.  
O-G—Detroit Gear & Mach. Co.  
Dod—Dodge Bros. Co.  
Gem—Gemmer Mfg. Co.  
Han—Hannum Mfg. Co.  
Jac—Saginaw Steering Gear,  
Div. General Motors Corp.  
Jav—Hannum Mfg. Co.  
Ros—Ross Gear & Tool Co.

✓

This 2-ton Model A6 is one of the Federal Models enjoying Spoksteel certain service. Single Spoksteel in front, Dual-Wheels behind.



# Spoksteel

by

Motor  
Wheel



There need be no compromise with speed, distance or weight when heavy-duty trucks are mounted on Motor Wheel Spoksteel single or Dual-Wheels. For Spoksteel enables maximum service and economy.

And back of Spoksteel service and economy are the causes. One piece high carbon drop forging for **STRENGTH**... fan-action spokes for **COOLNESS** and **CLEANLINESS**... hub mounting flange for **WHEEL RIGIDITY**... positively concentric spider and rim for the perfect "tracking" that avoids uneven tire wear.

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MOTOR WHEEL CORPORATION, LANSING, MICHIGAN



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